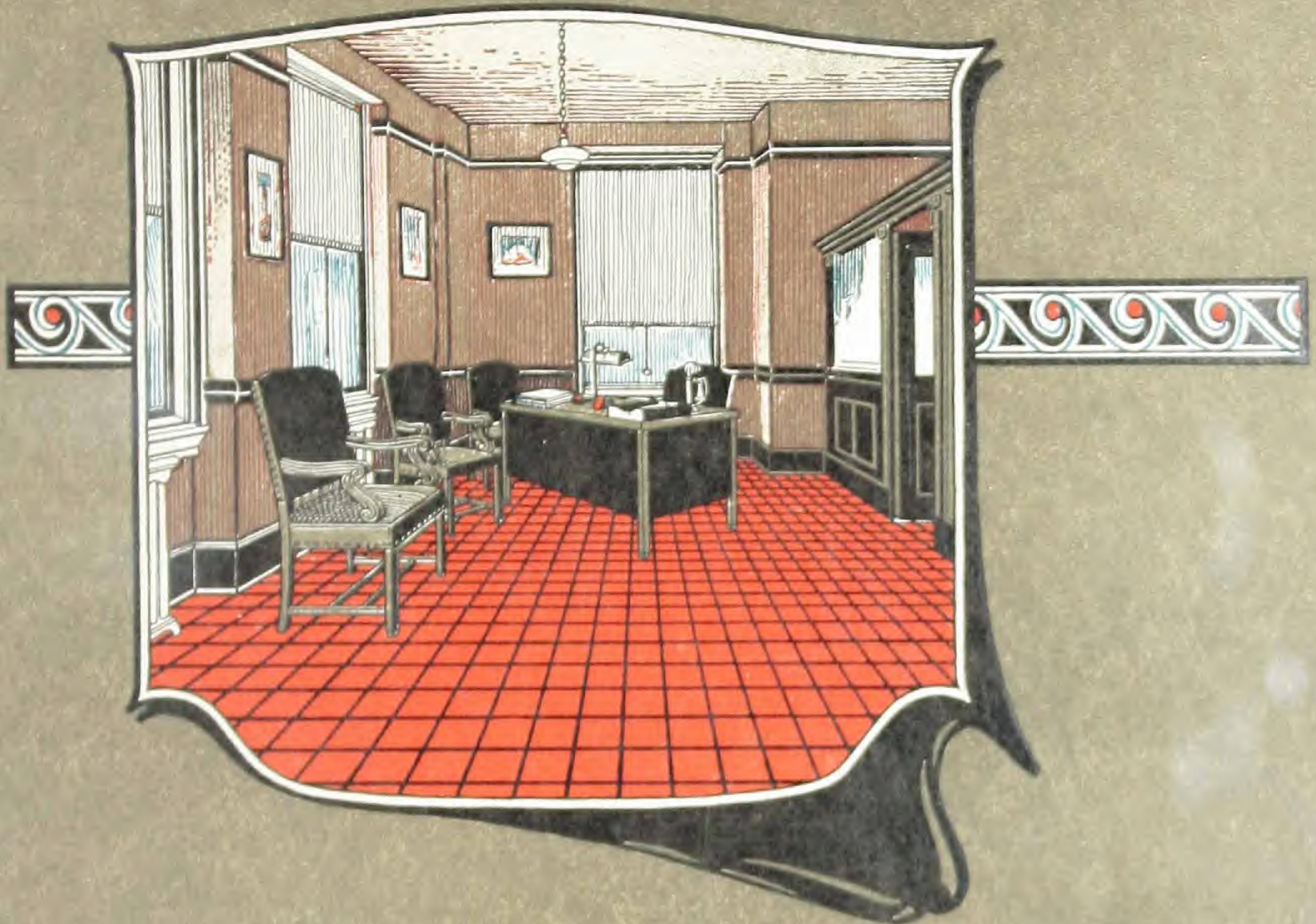


86-3.



Business Floors

BUSINESS FLOORS

of

Armstrong's Linoleum

for

OFFICES, PUBLIC BUILDINGS, BANKS
 HOTELS, STORES, RESTAURANTS, THEATERS
 LIBRARIES, CHURCHES, SCHOOLS
 HOSPITALS, REST ROOMS
 CLUB ROOMS, ETC.



THIRD EDITION
 JANUARY, 1924

ARMSTRONG CORK COMPANY
Linoleum Division
 LANCASTER, PA.

NEW YORK—295 Fifth Avenue
 CHICAGO—1206 Heyworth Building
 CLEVELAND—1205-6 Ulmer Building
 DALLAS—302 Melba Theater Building

ATLANTA—1228 Candler Building
 DENVER—725 Symes Building
 SAN FRANCISCO—525 Rialto Building
 SEATTLE—803 Terminal Sales Building



For the business room, where the tread of many feet wears constantly, a floor must be enduring. No less essential, the floor must measure up in appearance to the appointments of the room. Comfort to the workers should be insured, also, by the selection of a material that is resilient, quiet, warm, and nonslippery. No other floor combines all these qualities so admirably as does Armstrong's Linoleum. For this reason, modern linoleum, as installed here in the Citizens Savings Bank of Providence, R. I., is today accepted as an ideal business floor.

BUSINESS FLOORS

Selecting a Business Floor

IN SELECTING floors for the modern building, public or private, the owner or architect must choose, from the many types of materials on the market, one which most nearly meets all floor needs.

Today, whether the building is new or old, it is important to have a good floor. A handsome floor is a business asset because of the good impression it creates. A quiet, resilient floor makes for efficiency and comfort. A sanitary floor is a form of health insurance, and a durable floor is simply wise economy.

Most architects would probably say that the ideal floor should have the durability and sanitary qualities of marble, the warmth and resilience of cork tile, the quietness of rubber, the coloring of encaustic tiles.

More than any other flooring material, Armstrong's Linoleum possesses all these desirable characteristics, with the added advantage of genuine economy. Furthermore, linoleum is subject to none of the admittedly disadvantageous features found in many floor materials.

The chief advantages of linoleum installed as a permanent floor are:

1. Comfort	6. Quietness
2. Durability	7. Nonslipperiness
3. Sanitation	8. Ease of installation
4. Ease of cleaning	9. Economy
5. Artistic appearance	10. Suitability to fireproof construction

What Is Linoleum?

LINOLEUM takes its name from one of its principal ingredients, linseed oil (*linum*, flax, and *oleum*, oil). The oil is oxidized by exposing it to the air until it hardens into a tough, rubber-like substance, and is then thoroughly mixed with powdered cork, wood flour, various gums, and suitable dry pigments. The resulting plastic mass is pressed on burlap by means of heavy calenders, the exact processes varying with different kinds of linoleum. The "green" linoleum then passes into drying buildings called "stoves," where it is cured and seasoned from two to six weeks, depending on the thickness of the material.

The Advantages of Linoleum Floors

1. Linoleum Floors Are Comfortable

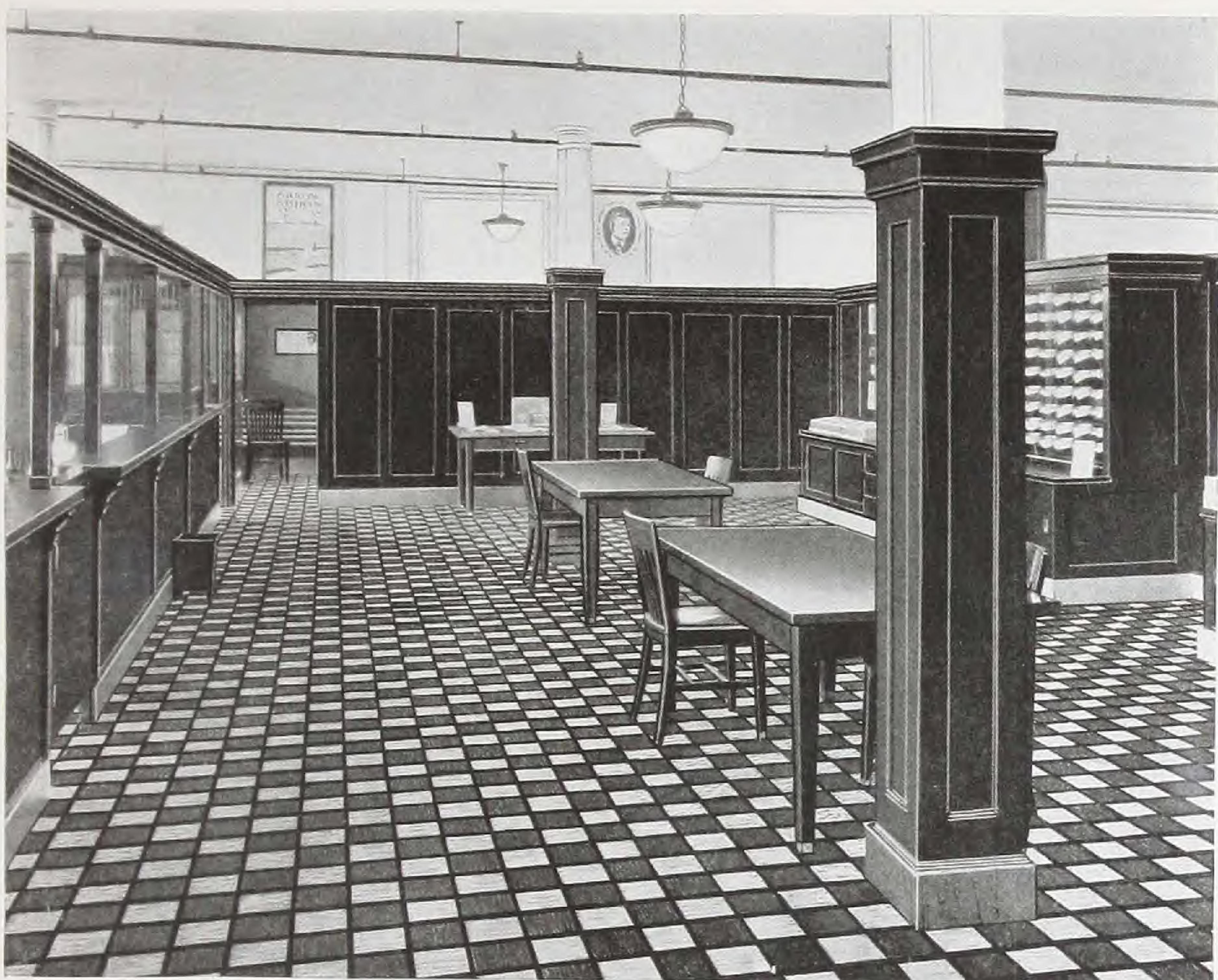
THE prime requisite of a business floor, particularly where workers have to be on their feet a large part of the time, is comfort. Because of its resilience, linoleum is, par excellence, the comfortable floor. Cork and oxidized linseed oil are naturally elastic, and in linoleum, they combine to act as a sort of cushion which yields slightly under pressure and thus absorbs the shock of footsteps. This delightful resilience of a linoleum floor is appreciated by all who have to stand constantly while at work. It makes linoleum especially desirable for ticket offices, working spaces of banks, hotels, stores, public offices, barber shops, stair treads, factories, lobbies, gymnasiums, etc.

A further requirement in a comfortable floor is that the material be not disagreeably cold to the touch. Cork is well known as a good insulator—witness its use for refrigeration and heat-insulating purposes—and for this reason linoleum is always warm, as contrasted to the coldness of tile, marble, and other dense, heavy substances. Unlike rubber tile, linoleum does not “draw” the feet or make them hot and feverish.

2. Linoleum Floors Are Durable

Properly installed and cared for, a linoleum floor of suitable thickness will wear well-nigh indefinitely. At least one instance is on record where an inlaid linoleum floor is still giving good service after forty years of wear. As linoleum has no grain, it cannot splinter; and, since it is elastic, it is not so likely to crack or crumble as concrete, tile, marble, or terrazzo. Its use by the Government on the decks of war vessels and for the floors of public buildings has forcefully demonstrated the durability and serviceableness of linoleum under varying conditions of hard usage.

An interesting test of the comparative durability of linoleum floors and hardwood is reported by Mr. O. T. O’Leary, of the Jordan-Marsh Company, Boston, Mass., one of the country’s largest department stores. While the store was being remodeled, traffic was diverted through two demonstration rooms, one floored with hardwood, the other with linoleum. After eight months, during which each floor bore the same traffic and was cared for in exactly the same way, the hardwood floor was so badly worn and pitted that refinishing was necessary. The linoleum showed little wear; it required only waxing to restore the original finish.



Here in the Denver, Colorado, offices of the Cluett-Peabody Company, floors of Armstrong's Parquetry Tile Inlaid Linoleum (No. P80) appear at their best. The two shades of brown, in a pleasing design, blend harmoniously into the decorative plan.

3. Linoleum Floors Are Sanitary

Due to its smooth, practically seamless, nonabsorbent surface, a linoleum floor is perfectly sanitary. The linoleum compound is free from capillary attraction, as it consists of fine cork particles, each well coated with a film of oxidized linseed oil, and all keyed together on the burlap backing under enormous pressure. Moreover, in installing a linoleum floor properly, all seams and edges are tightly fitted and sealed with a special waterproof cement. A good application of floor wax, rubbed in thoroughly, completes the floor and renders it practically impervious to water. It is this ability to resist moisture that is largely responsible for the exceptionally long life of linoleum.

Another feature which adds to the sanitary qualities of linoleum and makes it especially valuable for schools, hospitals, dispensaries, sanitariums, etc., is the germicidal action of oxidized linseed oil. This



This black-bordered floor of Armstrong's Inset Tile Inlaid Linoleum (No. T42) adds distinction to this showroom of the Bronx Buick Company, New York City. Not only does the floor invite prospects and customers; it even aids in the sale of the cars, by giving them an attractive setting.

power of linoleum is due to the fact that acid gases, including formaldehyde and formic acid, both strong bactericidal agents, are constantly being given off as a result of the linoxyn formation (i. e., oxidized linseed oil). This property of linseed oil has long been known. In recent years investigations conducted by a European scientist have apparently demonstrated that the oil, in the altered form in which it appears in linoleum, retains its bactericidal properties almost indefinitely.

4. Linoleum Floors Are Easily Cleaned

Because of its smooth, nonabsorbent surface and its freedom from cracks, a linoleum floor may be kept clean and bright at a minimum expenditure of time and effort. Only infrequent scrubbing, depending upon the amount of traffic, is required. Ordinarily, waxing and polishing at intervals, and then daily dusting with a hair broom or O'Cedar mop keep linoleum in good condition. See pages 40 to 44 for full details regarding the care of linoleum floors.

5. *Linoleum Floors Are Artistic in Appearance*

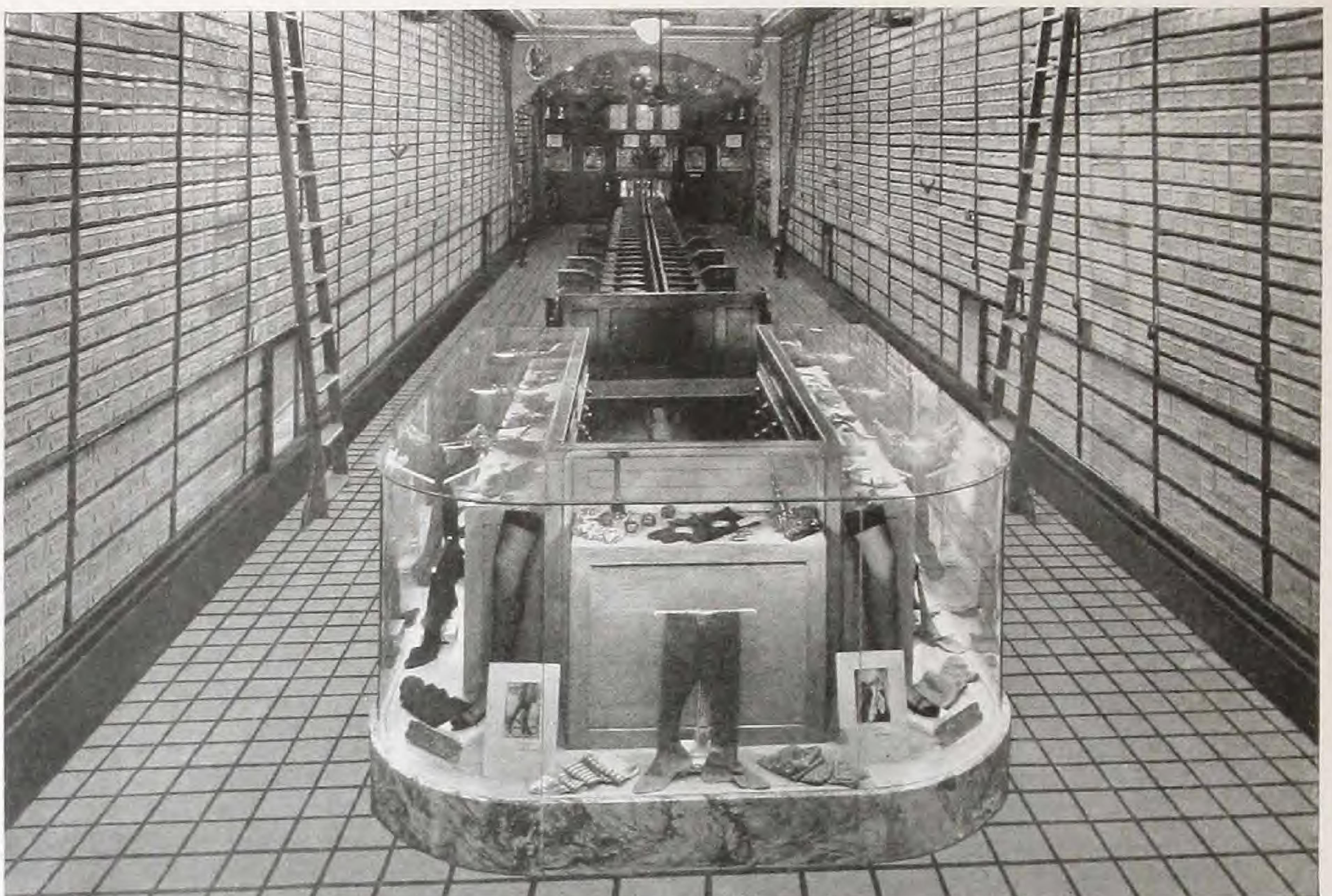
Not so long ago the word "linoleum" brought to mind large-flowered or geometric designs suitable mainly for household kitchen use. The modern development of linoleum has, however, evolved colorings and patterns that are remarkably attractive and expressly suited for different types of business floors. The seven plain colorings, the six jaspés, and the interesting marble, inset tile, moulded, and straight-line inlays in the Armstrong Line offer a wide choice of designs from which the owner or architect may select a linoleum floor that will be entirely in harmony with the general architectural plan. It is only necessary to turn to the color plates, pages 22 to 32 inclusive, to gain an idea of how well a linoleum floor of appropriate coloring or design will help carry out any desired decorative scheme.

6. *Linoleum Floors Are Quiet*

Silence underfoot is a necessity in many types of buildings, such as churches, libraries, schools, museums, art galleries, offices, etc. Linoleum or cork carpet (see page 32) eliminates much of the traffic noise on account



An example of what can be done to make the professional man's office an attractive room. Installing a suitable floor of Armstrong's Straight Line Inlaid Linoleum (No. 350) was the first step in redecorating this office, to make it a pleasant place in which to work and to receive clients. This is the office of Herbert E. Smith, patent attorney, Spokane, Wash.



Appearance of fixtures and equipment has an important bearing on the prestige of a retail store. Too often the floor has been neglected. A linoleum floor, such as this one of Armstrong's Inset Tile Inlaid (No. T42) with black border, in the Walkover Boot Shop, Toledo, Ohio, can be kept always clean, bright looking, and inviting, even in rainy weather.

of its extraordinary resilience, and also absorbs and deadens sounds arising from many other sources. In this connection it is interesting to note that the Remington Typewriter Company of New York City equipped a special typewriting room with a floor of Armstrong's Battleship Linoleum, on account of its sound-deadening properties.

7. Linoleum Floors Are Nonslippery

The elastic nature of the cork and linseed oil in linoleum makes for firm footing at all times. Linoleum floors tend to eliminate falls and accidents which so often occur on hardwood, marble, and other highly polished floors. Even when waxed and polished, linoleum floors are not slippery. To give linoleum a proper polish, wax must be applied sparingly and rubbed to a hard, smooth finish.

Because it is nonslippery, linoleum is especially suitable for stair treads and the inclined floors of theaters, auditoriums, churches, etc. This property is even more pronounced in cork carpet, which recommends it especially for running-tracks and gymnasium floors.

8. *Linoleum Floors Are Easy to Install*

Where floors must be installed in a limited time, the ease and speed with which linoleum can be laid is a decided factor in its favor. The cementing of linoleum over heavy deadening felt, as illustrated on page 36, is a relatively simple and rapid operation when the work is done by skilled professional layers.

Furthermore, permanent linoleum floors may be laid in rooms which are already occupied without serious interference with the routine. Linoleum is frequently installed in offices, stores, etc., over hardwood floors which require refinishing, if for no other reason than because the laying can be done in a single evening after the day's work is over. Business may be resumed next morning without interruption.



In the flower shop only beautiful surroundings and appointments should be tolerated. Armstrong's Linoleum is made in a variety of patterns and colorings that permit a floor selection which will harmonize beautifully with any interior. This floor is Armstrong's Inlaid Linoleum, in the flower shop of Max M. Smith, Portland, Ore. The counter tops also are of linoleum, a plain green being used for this purpose.



It would be hard to select a floor that would set off this children's barber shop in the store of L. Strauss & Co., Indianapolis, Ind., better than this Armstrong's Straight Line Inlaid Pattern 350. The large black and white squares, harmonizing perfectly with the furnishings, give the room tone and distinction. Moreover, the linoleum is very easily kept clean and is restful to the feet, floor qualities that the barber appreciates.

9. *Linoleum Floors Are Economical*

One of the deciding factors in the selection of materials for any new building is cost—not cost of installation alone, but upkeep expense and the length of time before replacement becomes necessary, as well.

On this score, linoleum floors afford a real saving, because of the reasonableness of first cost, the long service that they give, and the low cost of maintaining them in good condition. A comparison will show that linoleum usually can be laid as a permanent floor at a saving over other types of floors of equal serviceability.

Once linoleum is properly installed it withstands years of hard wear, with no need of refinishing or repair save the regular cleaning and waxing. In fact, the mere saving of the expense which periodic refinishing of wood floors requires will soon pay for the entire installation of a new linoleum floor over the old wood floor.



Here is shown the effect of burning on Armstrong's $\frac{1}{4}$ -inch Battleship Linoleum, a $12 \times 12 \times 36$ -inch crib made of 1-inch square yellow pine sticks soaked in kerosene. The linoleum, cemented over heavy felt to the concrete subfloor of a specially constructed test house, was seriously burned only over an area 54×38 inches and carbonized over an area 41×31 inches. The fire died out in 38 minutes.

10. Linoleum Floors Are Adapted to Fireproof Construction

Linoleum is given a credit of 7 per cent over wood floors in fire insurance rates on fireproof buildings, by the Western Actuarial Bureau. This rating places linoleum in the same classification with concrete, terrazzo, and ceramic tile. Instances are on record where linoleum floors have helped to localize the spread of fires.

Scientific fire tests, performed under exactly similar conditions on both linoleum and maple floors, have further shown that linoleum does not burn so readily nor hold fire so long as wood. These properties are clearly illustrated by the fire test photographs on this page.



The maple floor shown here, laid in the same house and submitted to an exactly similar test to that made on the battleship linoleum above, was badly scorched over an area 72×60 inches. The maple flooring, white pine underflooring, and embedded yellow pine sleeper, were completely burned over an area 48×36 inches. The floor was still smouldering next morning, 17 hours after the fire was started.



*Use of a border of plain black linoleum makes this floor of Armstrong's Inset Marble Tile Inlaid No. M63 especially effective. For a few of the many striking and individual combinations possible in bordered linoleum floors, see pages 30 and 31
This is the Atlanta, Ga., office of the Armstrong Cork Company.*

Linoleum for Offices

FOR the private office, linoleum makes possible a floor in keeping with the finest of mahogany appointments and the richest of fabric rugs. Use of an inset tile, marble inlaid, or moulded inlaid with a narrow border of gray or black makes possible very distinctive effects.

In a large general office, where there are many workers, quiet is probably the most desired, yet most difficult, essential to secure. Quite often people do not realize that a quiet floor goes a long way toward making a quiet room. The splendid sound-deadening properties of linoleum recommend it preeminently for the large office floor.

For private offices linoleum of A or B gauge is entirely heavy enough for practical purposes. Where there is steady traffic all day long, as in public offices, however, it is economy to install a battleship gauge.

Linoleum for Hospitals

IN THE order of their importance, the qualities of an ideal hospital floor are sanitation, cleanliness, quietness, attractiveness, and durability. These qualities are very happily combined in linoleum, and floors of Armstrong's Linoleum are in use in hospitals the country over.

For ward rooms, operating-rooms, corridors, dining-rooms, kitchens, offices, there are linoleum designs particularly appropriate. One of the most all-round satisfactory patterns for hospital use is jaspé. Edward F. Stevens, of Boston, a well-known hospital architect, specifies Armstrong's Jaspé floors for many of the hospitals he designs. He says:

"The artistic qualities of the variegated color surface of the 'jaspé' are so much more attractive than the plain monotonous brown of the battleship, that even though we should, in the course of fifteen or twenty years, be required to replace some portions of the jaspé linoleum (because it is lighter in gauge) I think we are then better off than we would be to use the brown battleship."



"Floors of Armstrong's Jaspé Linoleum have been in use in this hospital three years. They are giving very satisfactory service and do not show wear," says the medical director of the Jersey City Hospital. Over 6,500 square yards of gray jaspé have been laid in this institution.



Quietness and beauty are the qualities sought most in the floors of churches and like institutions. The Second Church of Christ, in Spokane, Wash., has happily combined these desirable characteristics in its floors of Armstrong's Linoleum. This floor in the foyer is Inset Tile Inlaid No. T42, with a border of plain gray linoleum.

Linoleum for Churches, Auditoriums, Theaters

IT IS relatively easier to preserve silence where there is a floor that deadens sound. Footsteps of late comers, shuffling of feet, and other irritating noises are softened by the right kind of floor—Armstrong's Linoleum or Cork Carpet.

Cork carpet is particularly recommended for churches, auditoriums, Sunday-school rooms, lodge-rooms, public speaking halls, theaters, motion-picture houses, etc. Because it is more lightly compacted than battleship linoleum of equal thickness, its sound-deadening properties rank high. It not only silences footsteps, but breaks other sounds as well.

Another quality that recommends cork carpet for aisles and inclined floors is the fact that it is not slippery—a property which has led to the frequent use of cork carpet for running-tracks and gymnasium floors.

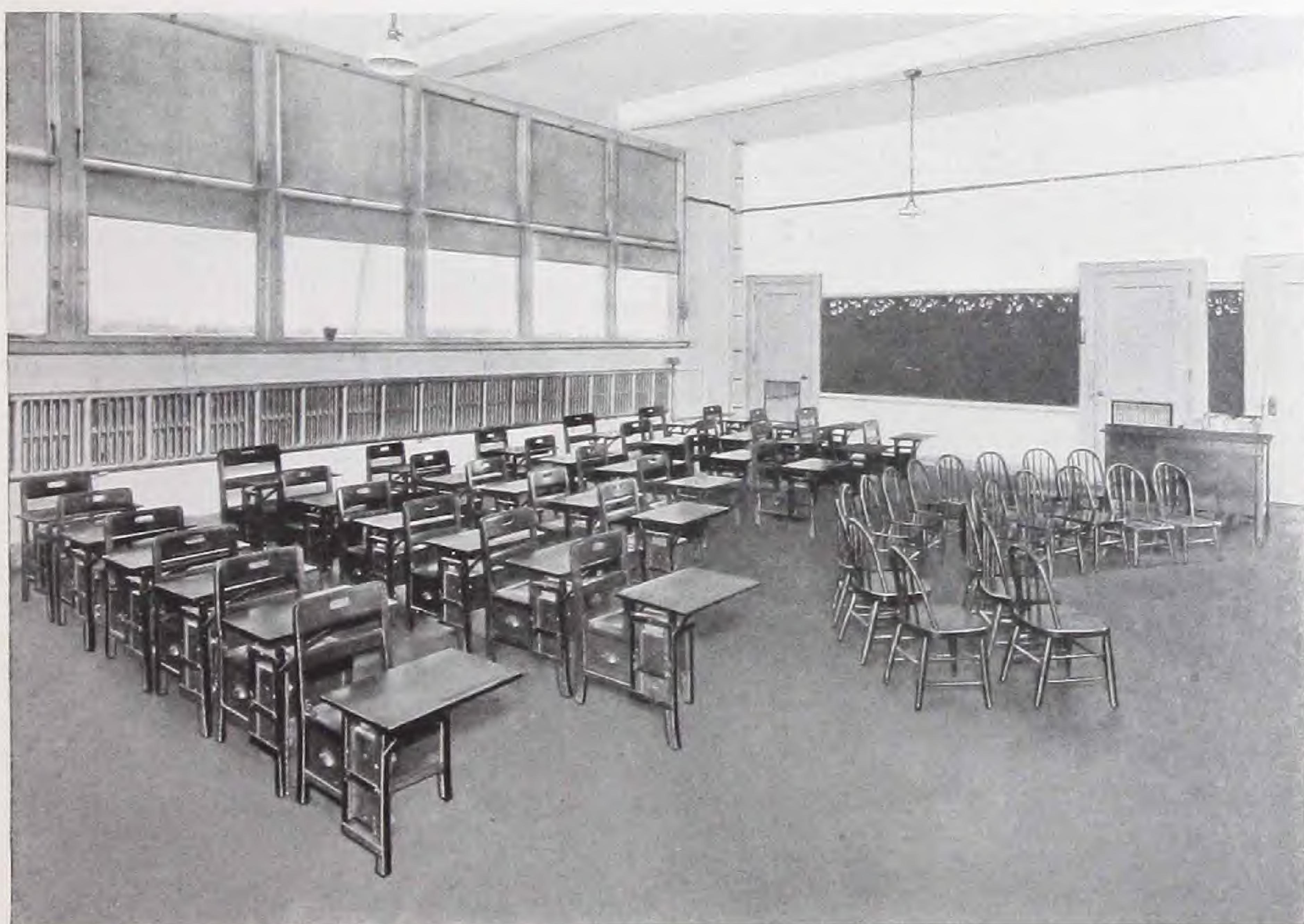
Linoleum for Schools

EFFICIENCY in the schoolroom depends upon suppression of the many noises that distract attention of the boys and girls. Health must be guarded by strictly sanitary and easily cleaned materials and equipment. Buildings must be built to conform to fire regulations.

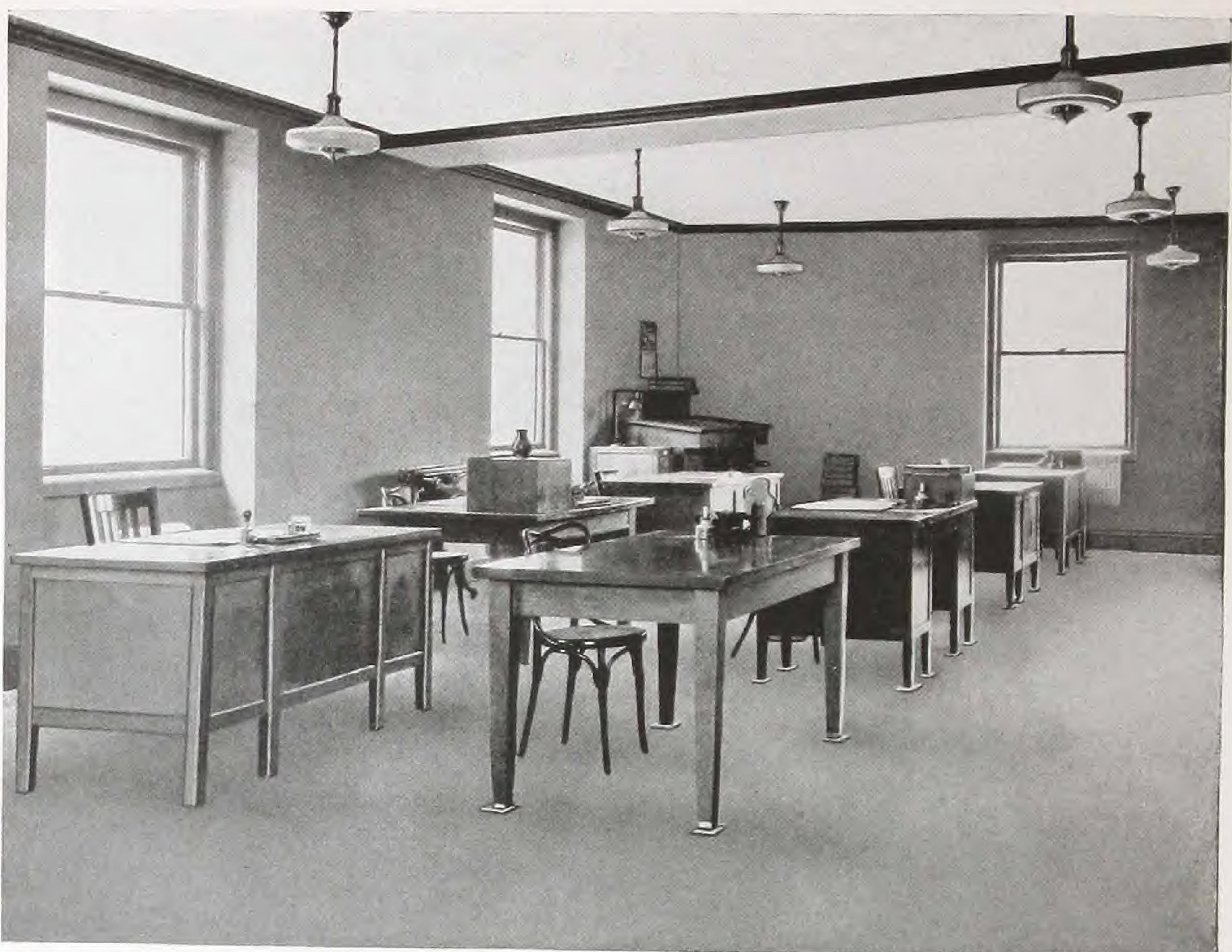
For modern schools, architects are specifying linoleum floors to be laid directly over the fireproof concrete base. In many old school buildings the worn, creaking wood floors are being renewed with quiet, sanitary linoleum.

A brown, gray, or green battleship linoleum floor is ideal for study and recitation rooms, corridors, and entrance halls. The colors are pleasing and will harmonize with almost any decorative scheme. The quarter-inch gauge withstands the wear of children's footsteps well-nigh indefinitely.

Turn to page 46 for a list of representative schools where floors of Armstrong's Linoleum are giving satisfactory service.



Quiet, cleanliness, comfort, and durability are points demanded of a schoolroom floor. Linoleum has proved the logical solution of the problem. This is a classroom in the Strathmoor School, Detroit, Michigan, in which 5,400 square feet of Armstrong's Quarter-inch Brown Battleship Linoleum are installed.



For a public office floor, durability, comfort, and cleanliness are main requirements. Armstrong's Linoleum affords these qualities. One hundred per cent service should be insured by proper installation and intelligent care. The State Architect of California, who specified this floor of Armstrong's Three-sixteenths-inch Brown Battleship Linoleum, in the California State Building in the Civic Center of San Francisco, has standardized the laying of linoleum for all state work, and requires that it be cemented over a felt lining.

Linoleum for Public Buildings

THE floor of a public building must first of all be durable. Yet there should be due regard also for the comfort of the thousands of feet that tread on it daily. Looks are important, too, as are fire-proof qualities and cost of maintenance.

That Armstrong's Linoleum combines all these necessary floor characteristics is evident from the large and ever-growing number of public buildings—state capitols, courthouses, post-offices, city halls, where such floors are being installed. Some of the more recent installations of Armstrong's Linoleum in buildings of this character are listed on page 46.

The three battleship colorings—brown, green, and gray—and the straight line designs afford a wide choice for public-building floors.

Linoleum for Libraries

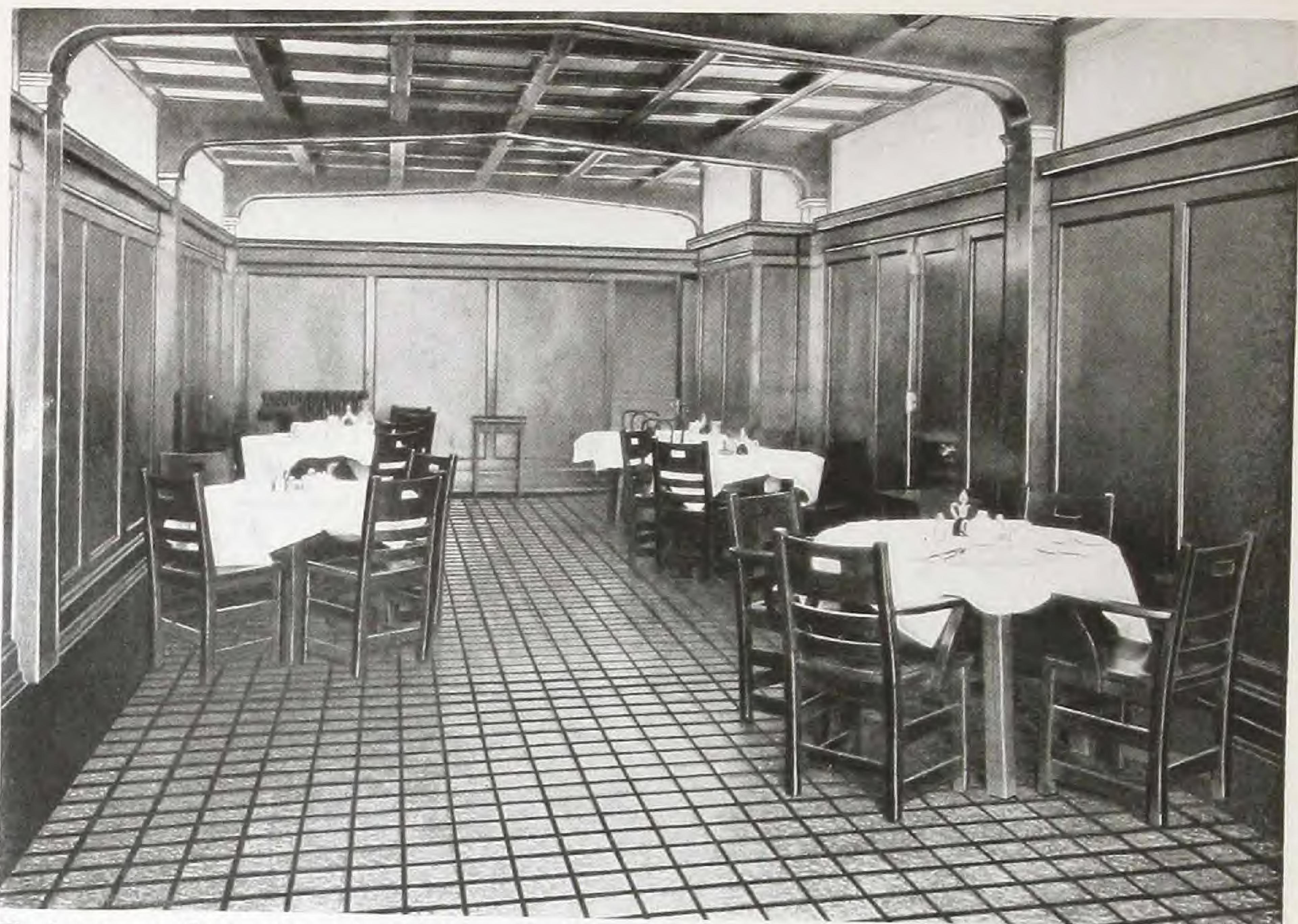
A LIBRARY is not silent simply because people are not talking. Clacking heels, scraping chairs, shuffling feet make noises, too, unless the floor is one that deadens sound. That is a virtue of floors of Armstrong's Linoleum or Cork Carpet—they insure underfoot silence.

But silence is not the only virtue of a linoleum floor. Linoleum is easy to clean and waterproof, as the custodian of any library equipped with such floors can tell you. Year after year they can be kept fresh-looking and inviting.

Best suited for libraries, museums, and similar institutions are cork carpet and battleship or jaspé linoleum. A battleship thickness ($\frac{1}{4}$ -inch or $\frac{3}{16}$ -inch) is sufficiently thick, if properly laid, to give many years' wear.



When the Denver, Colorado, Library Board was seeking a quiet, durable, easily cleaned floor for the Sarah Platt Decker Branch Library, they investigated linoleum. Armstrong's Quarter-inch Brown Battleship was installed and is giving good service.



To insure a floor that would harmonize with the beautiful appointments, the Ross Club of Williamsport, Pa., had Armstrong's Inset Marble Tile Inlaid No. M61 laid in its handsome grillroom, with a border of plain black linoleum. This floor does not stain and is readily cleaned.

Linoleum for Restaurants and Dining-Rooms

A RESTAURANT floor must be always handsome and clean, even though it may receive rough treatment. Crumbs, grease, cigar ashes must not damage or discolor it. It must not be slippery or noisy.

The ideal flooring, which measures up to all these diverse requirements, is Armstrong's Linoleum. The inset tiles, marble inlays, and jaspés, finished with harmonizing or contrasting borders, make possible truly artistic floors worthy of the best efforts of the interior decorator.

The resilience of linoleum deadens footfalls. It is smooth enough for dancing, yet not slippery. Dirt and grease are removed easily. Patrons like the bright, colorful, always tidy appearance of a polished linoleum floor.

When properly installed and waxed, a linoleum floor is one smooth, seamless expanse, perfectly sanitary and delightful to the eye. Light cleaning with a waxed mop or brush removes footmarks and restores the beautiful luster and polish. In fact, maintenance costs are reduced to a minimum with linoleum, and flooring expenses settled for years to come.

Linoleum for Stores and Business Rooms

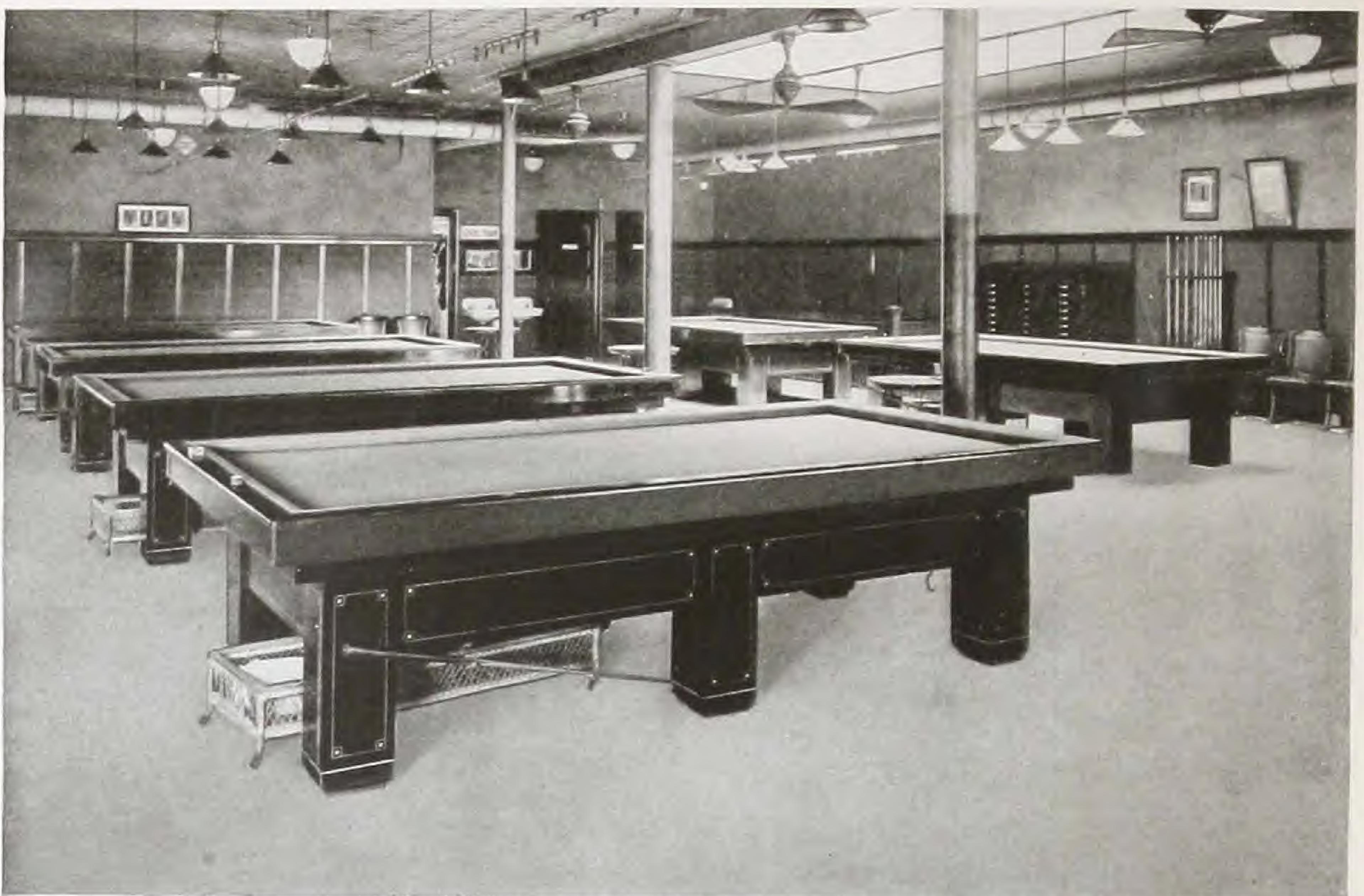
A HANSDOME floor may be a definite sales asset. People invariably prefer to buy where both merchandise and fixtures are in the best of taste. Whether it be in department store, specialty shop, confectionery store, flower shop, or shoe store, the attractions of handsome fixtures, neatly arranged counters and shelves, and courteous, well-dressed salespeople may be offset by a dull, unsanitary wood floor.

Armstrong's Linoleum suggests the remedy—a floor that will blend perfectly with the other beautiful appointments. A floor of black and white six-inch tile, an inset tile, or a marble inlaid design can actually transform an ordinary business room to a "smart" shop or a distinctive modern store. The use of a tile design with border is particularly effective.

Linoleum floors solve the cleaning problem. Going over them nightly with a waxed mop takes away the day's traffic marks and leaves linoleum floors bright and shining. Such floors also bring comfort to shoppers and salespeople, especially the latter, who have to stand so much.



Simplicity is the keynote of this modern shop. How effectively the idea is carried by the plain black and white linoleum floor! This is Armstrong's Straight Line Inlaid Pattern 350, in the Empress Waist Shop, Chicago, Illinois.



The floor of a club or lodge, especially in the billiard room, should be resilient, warm, quiet, and exceptionally durable. It has to withstand more than ordinary wear, particularly around the tables. Armstrong's Cork Carpet or Battleship Linoleum gives ideal service under these conditions. Twelve hundred square yards of brown cork carpet are installed here, in Bensinger's Billiard Hall, Chicago, Ill.

Linoleum for Clubs and Lodge-Rooms

LINOLEUM qualifies as an excellent flooring material for clubs, lodge-rooms, theaters, auditoriums, and similar rooms on three points especially: First, linoleum is serviceable; it stands up well under hard usage by crowds of people.

Second, cleaning a linoleum floor after the severe treatment given it at an evening's performance at the theater, a lecture at the auditorium, or a session of the club or lodge, is comparatively easy. Maintenance does not require much time or expense, as waxing and polishing reduce daily cleaning to a minimum. Going over the floor with a soft floor brush every day removes cigar ashes, dirt, and dust; and polishing with an electric floor-machine keeps the floor looking its best.

Finally, a linoleum floor helps speakers or performers, as it is sound-deadening. The quiet resilience of natural cork and oxidized linseed oil is preserved in linoleum and not only softens the footsteps of late comers, but also helps absorb other sounds, such as scraping feet, creaking chairs, etc.

Linoleum for Hotels

FOR the hotel, linoleum provides a floor at once handsome and striking, and at the same time long-wearing and easy to maintain.

For lobby and other public rooms, the jaspés, inset tiles, and marble inlays, surrounded by harmonizing borders, are appropriate.

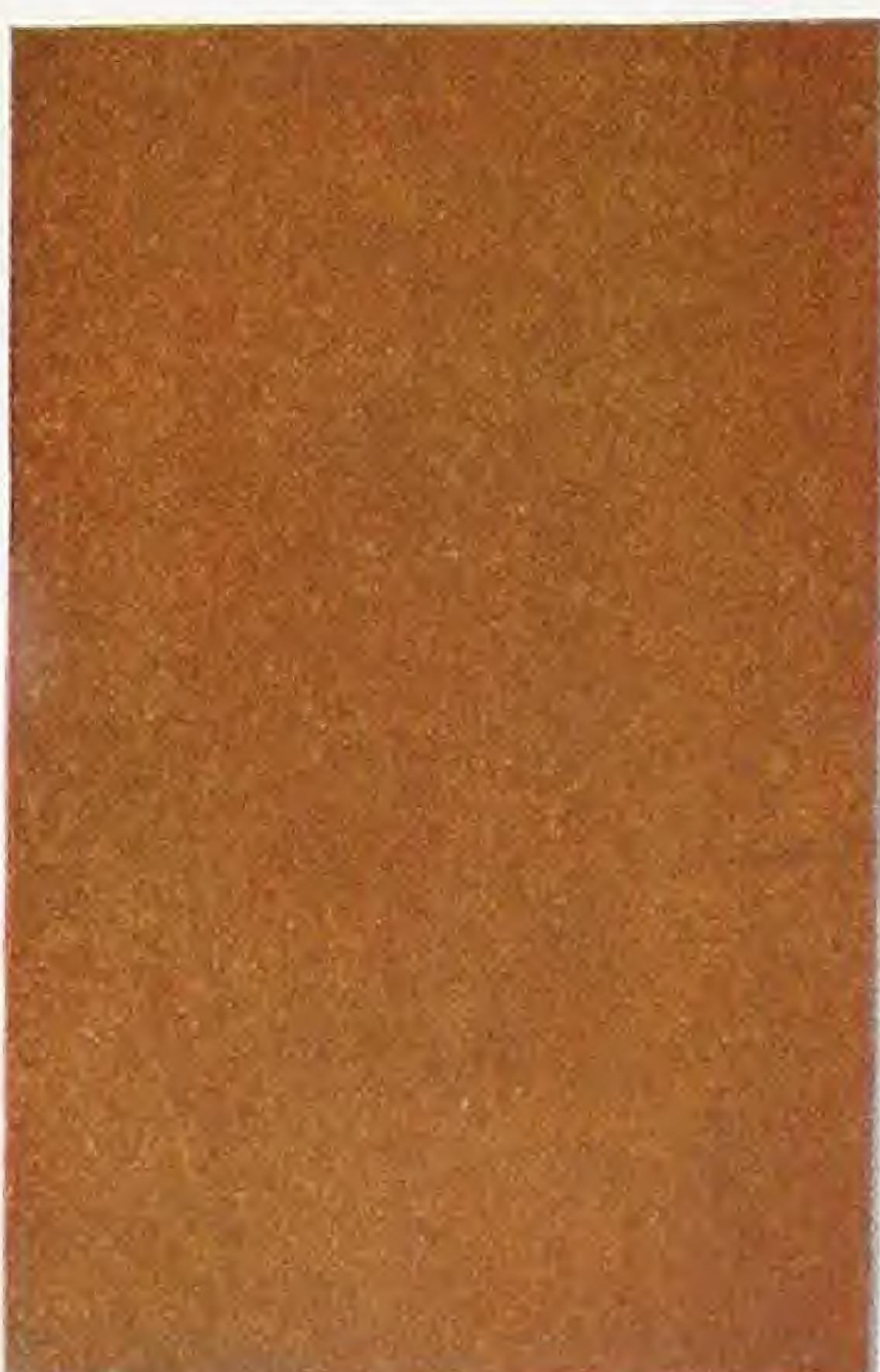
Corridors and service-rooms, where durability is a primary consideration, may be floored with plain color or jaspé linoleum in a heavy gauge. Offices may be given a touch of refinement by laying the floor with a pleasing border. In the guest-rooms use soft plain color or carpet-design inlaid linoleum in combination with small "scatter" rugs.

Read what the manager of the Hotel Sterling, of Wilkes-Barre, Pa., says:

"Our ballroom floor is a very high-grade maple floor laid on rubber sheeting, but is not as satisfactory as linoleum. The wood floor is difficult to keep clean and expensive to maintain. The linoleum floor in our dining-room, on the other hand, has been submitted to extremely heavy use for three years and does not show the slightest indication of wear. As evidence of our opinion of linoleum for dance floors, we expect to specify black linoleum for the large ballroom of our new hotel."



When waxed and polished, linoleum floors are ideal for dancing. That they are easy to clean and never need refinishing, in addition, makes linoleum floors especially suitable for hotels. This is the Oak Room of the Hotel Nonotuck, Holyoke, Mass., floored with Armstrong's Green Battleship Linoleum



Brown—Color No. 20



Green—Color No. 21



Dark Gray—Color No. 22



Light Gray—Color No. 26



Tan—Color No. 28



Blue—Color No. 29

Battleship and Plain Linoleum

BECAUSE of its soft and unobtrusive solid color, a plain linoleum floor is appropriate for practically every kind of business room, office, or public or semi-public building. Battleship linoleum may be had in brown, green, and dark gray, and is made in four thicknesses, $\frac{1}{4}$ -inch, 6-mm., $\frac{3}{16}$ -inch, and A gauge (.142-inch). "Light" battleship is simply A gauge plain linoleum, finished with the back unpainted.

Architects and contractors who specify quarter-inch battleship linoleum in their work are cautioned to make sure they actually get what they specify. Battleship linoleum of six millimeter gauge (.015 inch less

than $\frac{1}{4}$ -inch gauge) is sometimes offered and substituted for genuine $\frac{1}{4}$ -inch battleship under the name of "Commercial $\frac{1}{4}$ -inch Battleship."

A species of "battleship linoleum" with a structure differing from standard battleship linoleum has recently been placed on the market. This material is made by the same process used in the manufacture of cork carpet. In appearance it suggests a material between cork carpet and standard battleship linoleum. The surface is not smooth like standard battleship and is correspondingly more difficult to clean. Its moisture absorption is high, and hence it is more susceptible to the disintegrating action of the alkaline soaps and powders so frequently used for cleaning purposes. All Armstrong's Battleship Linoleum is the old-fashioned standard kind, made with preoxidized linseed oil "binder."

Black linoleum (Color No. 27) is made in $\frac{3}{16}$ -inch, A, B, C, and D gauges, for border use with inset tiles, moulded inlays, jaspés, etc.

The gauge of each thickness in which Armstrong's Battleship Linoleum is manufactured is clearly stamped on the burlap back of each yard of goods, as shown in the illustration. This is done to assure the purchaser that he is actually receiving the exact thickness specified.

Also for the protection of the purchaser, any Armstrong's Battleship Linoleum sold at a discount because slightly imperfect is clearly marked with the word "Seconds" on the burlap back.

Look for the gauge marked on the back of each yard of Armstrong's $\frac{1}{4}$ -inch, 6-mm., $\frac{3}{16}$ -inch, and Light Battleship Linoleum.

Armstrong's Battleship and Plain Linoleum is manufactured two yards wide only and is shipped in rolls containing approximately sixty square yards. Following are given the eight gauges, with the thickness in inches, average net weight, and colorings for each gauge:

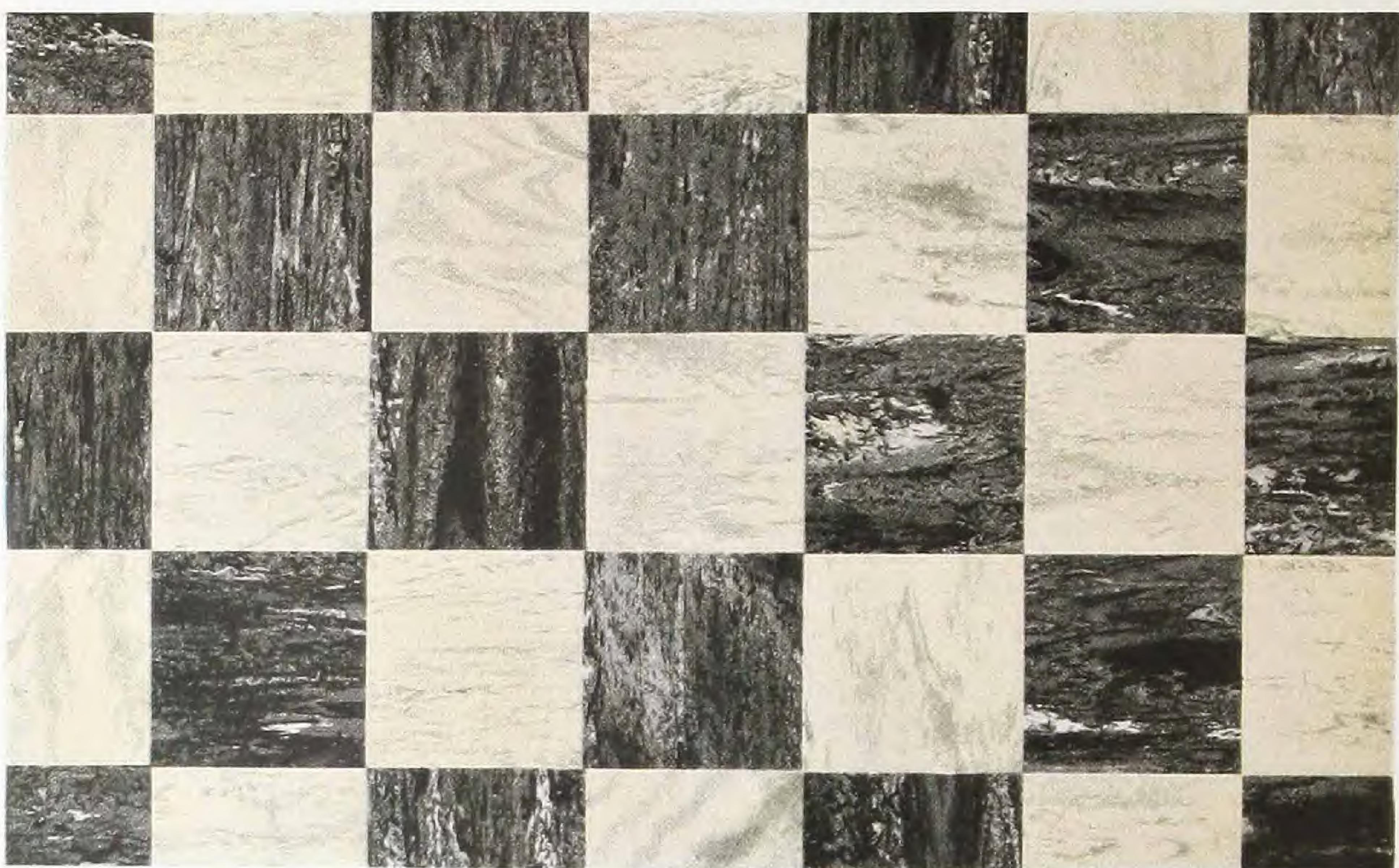
GAUGES	THICKNESS IN INCHES	AVERAGE NET WEIGHT POUNDS PER SQUARE YARD	MADE IN COLORS Nos.
Battleship ($\frac{1}{4}$ -in.) . . . . .	.250	13.0	20, 21, 22
Battleship (6-mm.) . . . . .	.235	12.0	20, 21, 22
Battleship ($\frac{3}{16}$ -in.) . . . . .	.185	9.3	20, 21, 22, 27
Light Battleship* . . . . .	.142	6.8	20, 21, 22
A* . . . . .	.142	7.8	20, 21, 22, 26, 27, 28, 29
B . . . . .	.119	6.8	20, 21, 22, 26, 27, 28, 29
C . . . . .	.095	5.6	20, 21, 22, 27
D . . . . .	.080	4.6	20, 21, 22, 27

*Light Battleship is A Gauge Plain Linoleum with unpainted back.



Reproduction of marking stamp on back of every yard of Armstrong's Battleship Linoleum. Note that the gauge or thickness is clearly indicated.

Marble Inlaid Linoleum



Marble Inlaid No. 70

Blocks in this pattern are six inches square.



Marble Inlaid No. 71

Blocks in this pattern are six inches square. Patterns 73, black and gray, and 74, reddish brown and cream, are similar in design, except that blocks are marbled and are nine inches square.

Marble Inlaid Linoleum



Marble Inlaid No. 75

Blocks in this pattern are seven inches square, with two-inch interliners.



Marble Inlaid No. 72

Blocks in this pattern are nine inches square. Similar in design but with blocks twelve inches square are patterns 76, alternating black and gray, and 77, alternating blue and gray.

Marble Inlaid Linoleum

THE patterns shown on the two preceding pages are representative of one of the newest developments in linoleum design. Eight distinctive patterns of the type illustrated are now available in Armstrong's Marble Inlaid Linoleum.

The new marble inlaid linoleum, with its large squares, is particularly appropriate for the floors of fashionable hotels, clubs and restaurants, exclusive shops, stylish showrooms, elegant theater lobbies, and fine residences and apartments. Superb in appearance, this linoleum is also quiet, nonslippery, soft to walk on, and very easy to keep clean and polished—virtues combined in no other type of floor. In fact, this new kind of linoleum affords a floor fully as serviceable and just as beautiful as other commonly used flooring materials that cost two and three times as much.

With floors of marble inlaid, striking and individual effects can be obtained by using a border of plain colored or jaspé linoleum around the main patterned area. See pages 30 and 31 for further information on the use of bordered linoleum floors.

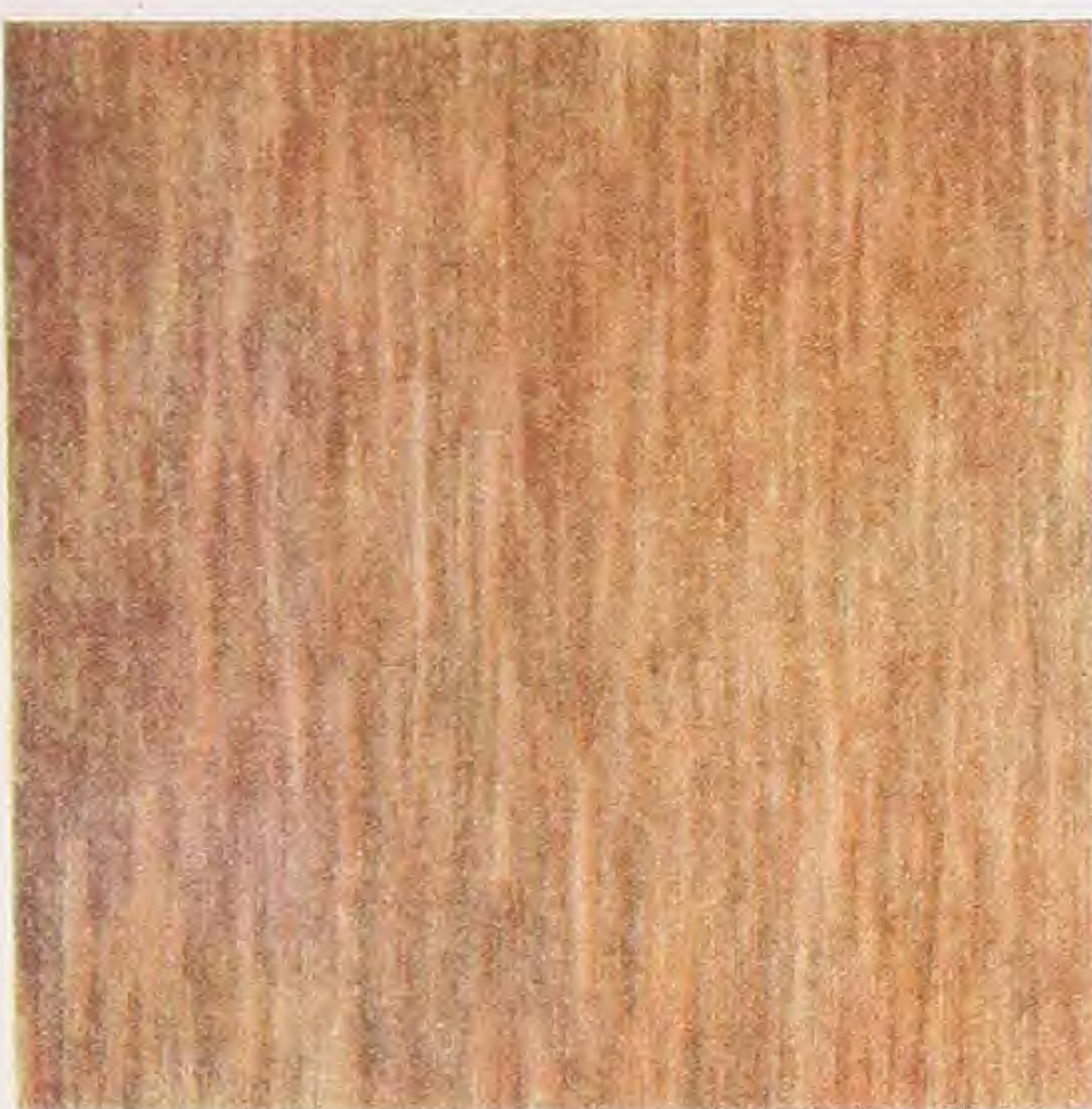
The eight marble inlaid patterns, which are a kind of straight line inlaid linoleum, are made only in the A gauge, .114-inch thick, with an average net weight of 7.3 pounds per square yard. The rolls are six feet wide only, and approximately thirty yards in length. Lithographs showing the marble inlays in exact size may be had on request.



Light Gray Jaspé—Color No. 13



Dark Gray Jaspé—Color No. 15



Light Brown Jaspé—Color No. 16



Dark Brown Jaspé—Color No. 17



Blue Jaspé—Color No. 18



Green Jaspé—Color No. 19

Jaspé Linoleum

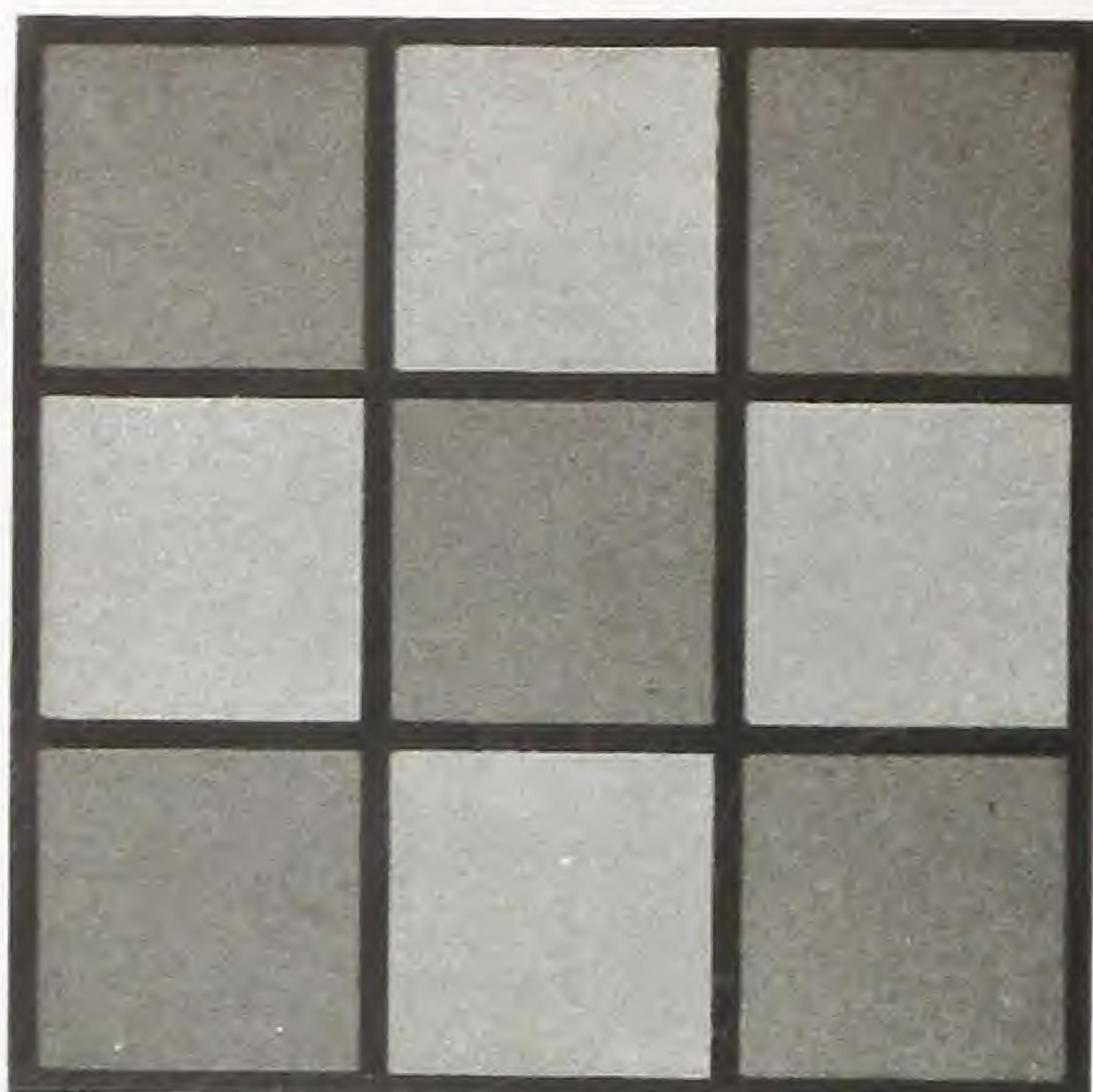
THE soft, two-tone effects in Armstrong's Jaspé Linoleum make particularly pleasing and attractive floors for private offices, rest-rooms, apartment houses, hospitals, hotels, schools, high-grade shops, etc. Jaspé is an inlaid linoleum, as the graining runs through to the burlap.

Armstrong's Jaspé is made two yards wide only. Each coloring may be had in A gauge .142 inch thick, average net weight 8.5 pounds per square yard, and B gauge .119 inch thick, average net weight 7 pounds. Colors Nos. 15 and 17 are also made $\frac{3}{16}$ -inch thick.

Straight Line Inlaid Linoleum

FROM among the designs in Armstrong's Straight Line Inlaid Linoleum may be selected a floor suitable for practically any business room or office. Of straight line patterns, including marble inlays, inset tiles, inset marble tiles, and parquetry, there are eighty-five; four typical designs are shown on this page.

Armstrong's Straight Line Inlaid Linoleum is made in A gauge, .114-inch thick, average net weight 7.3 pounds per square yard and D gauge, .066-inch thick, average net weight 5.1 pounds per square yard. It is made two yards wide only, in sixty square yard rolls.



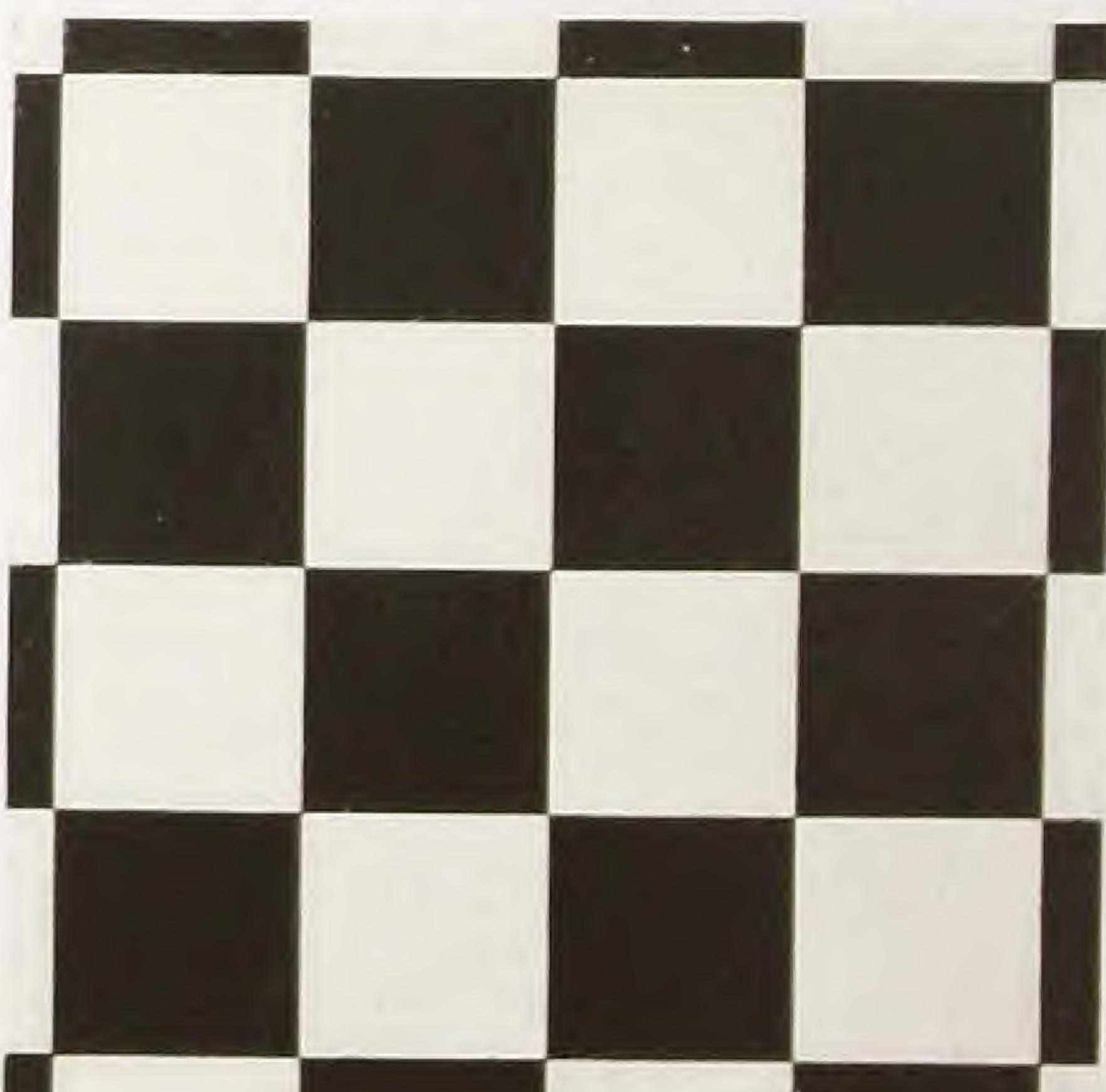
Inset Tile Inlaid No. T48



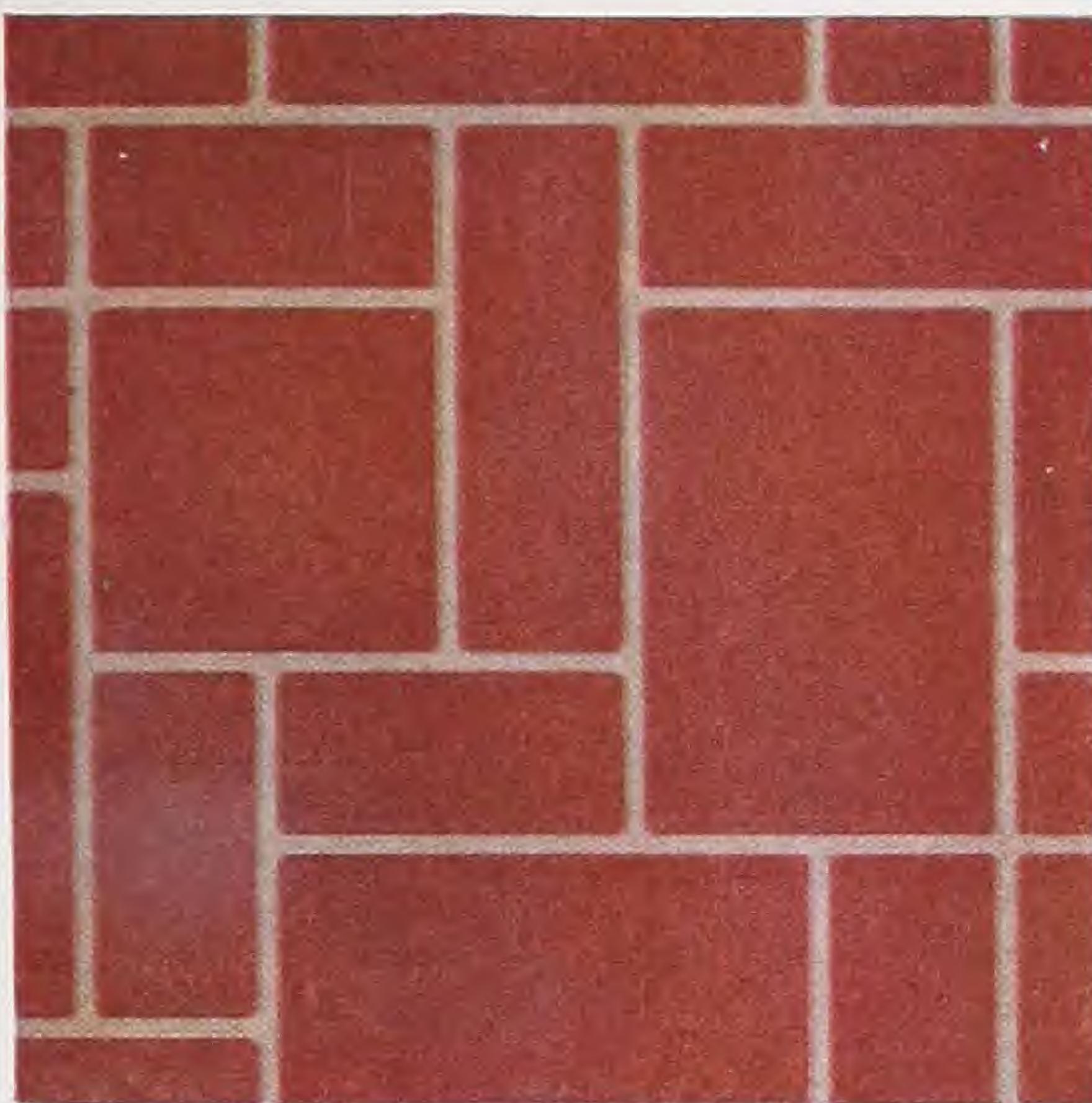
Inset Tile Inlaid No. T47



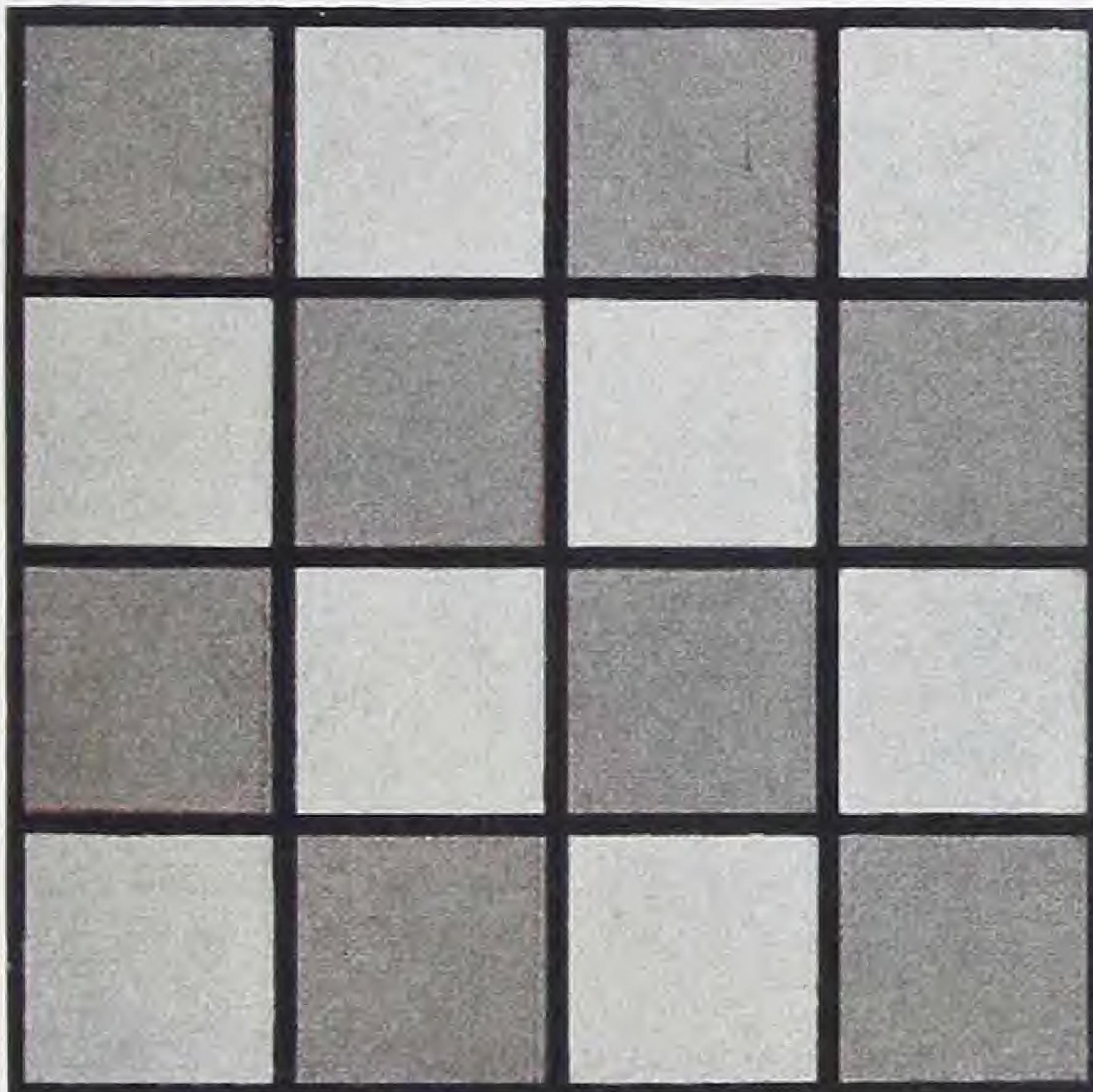
A Gauge Straight Line Inlaid No. 200



A Gauge Straight Line Inlaid No. 285



B Gauge Moulded Inlaid No. 3040



C Gauge Moulded Inlaid No. 5059



B Gauge Moulded Inlaid No. 3093



C Gauge Moulded Inlaid No. 5105

Moulded Inlaid Linoleum

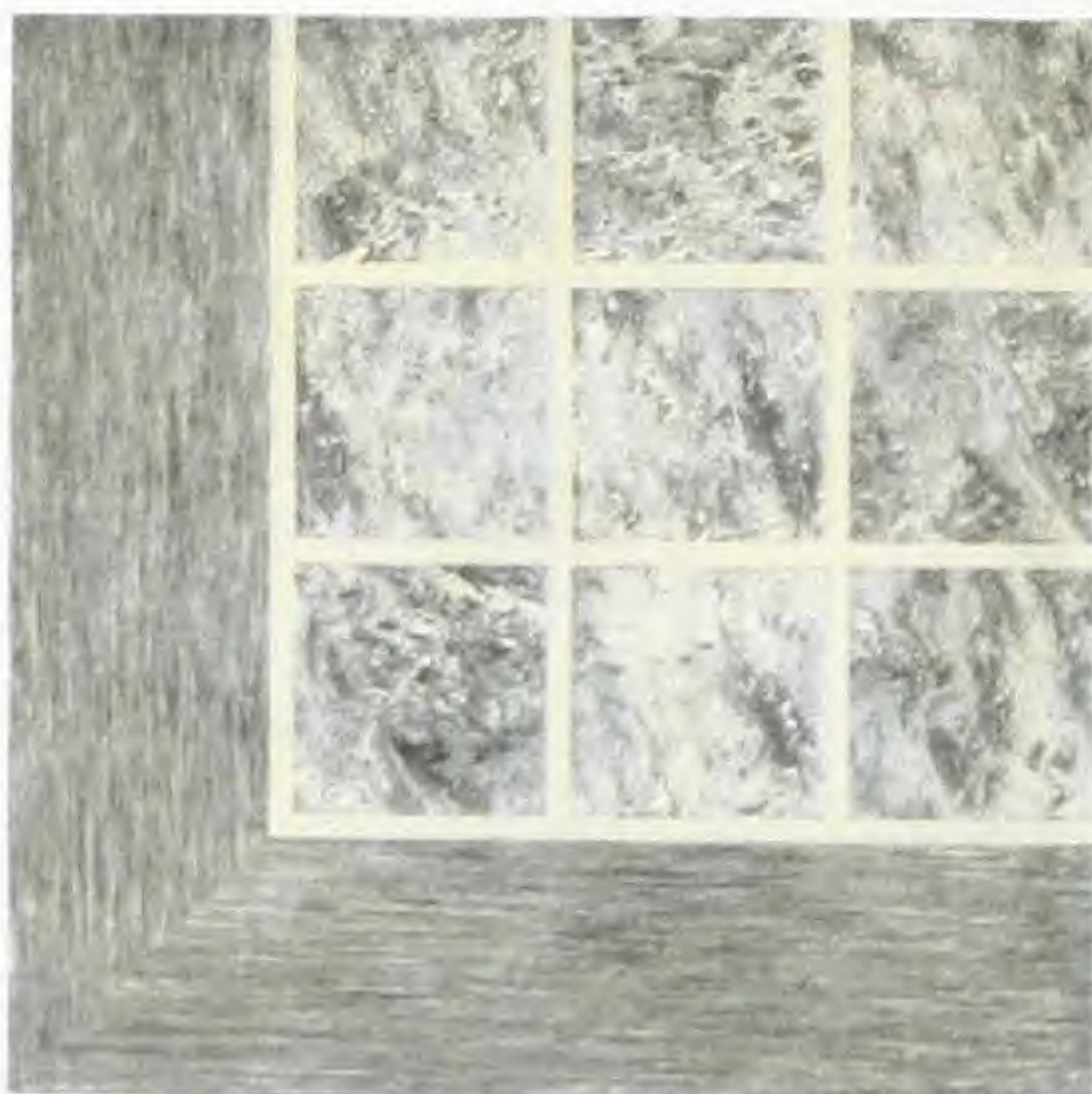
MOULDDED inlaid linoleum may be distinguished from straight line inlaid linoleum by the fact that the lines of the designs are irregular, the edges of the different colored blocks moulding slightly into each other. This produces very artistic effects, particularly in patterns like the Dutch tiles and carpet designs.

There are forty-seven moulded inlaid patterns made in the B gauge, .095-inch thick, and forty-six patterns made in the C gauge, .074-inch thick. All moulded inlaid linoleum is made six feet wide, with certain patterns also made twelve feet wide.

Bordered Linoleum Floors

A NEW development in linoleum floors is the use of a border of plain or jaspé, in combination with another color of plain or jaspé or an inlaid design—such as the inset tiles, marble inlays, straight line or moulded inlays. On these two pages are eight designs which suggest a few of the interesting and artistic combinations which may be worked out.

The width of the border naturally will depend on the size of the room and on the economical cutting of the linoleum, and may vary from a few inches to several feet.



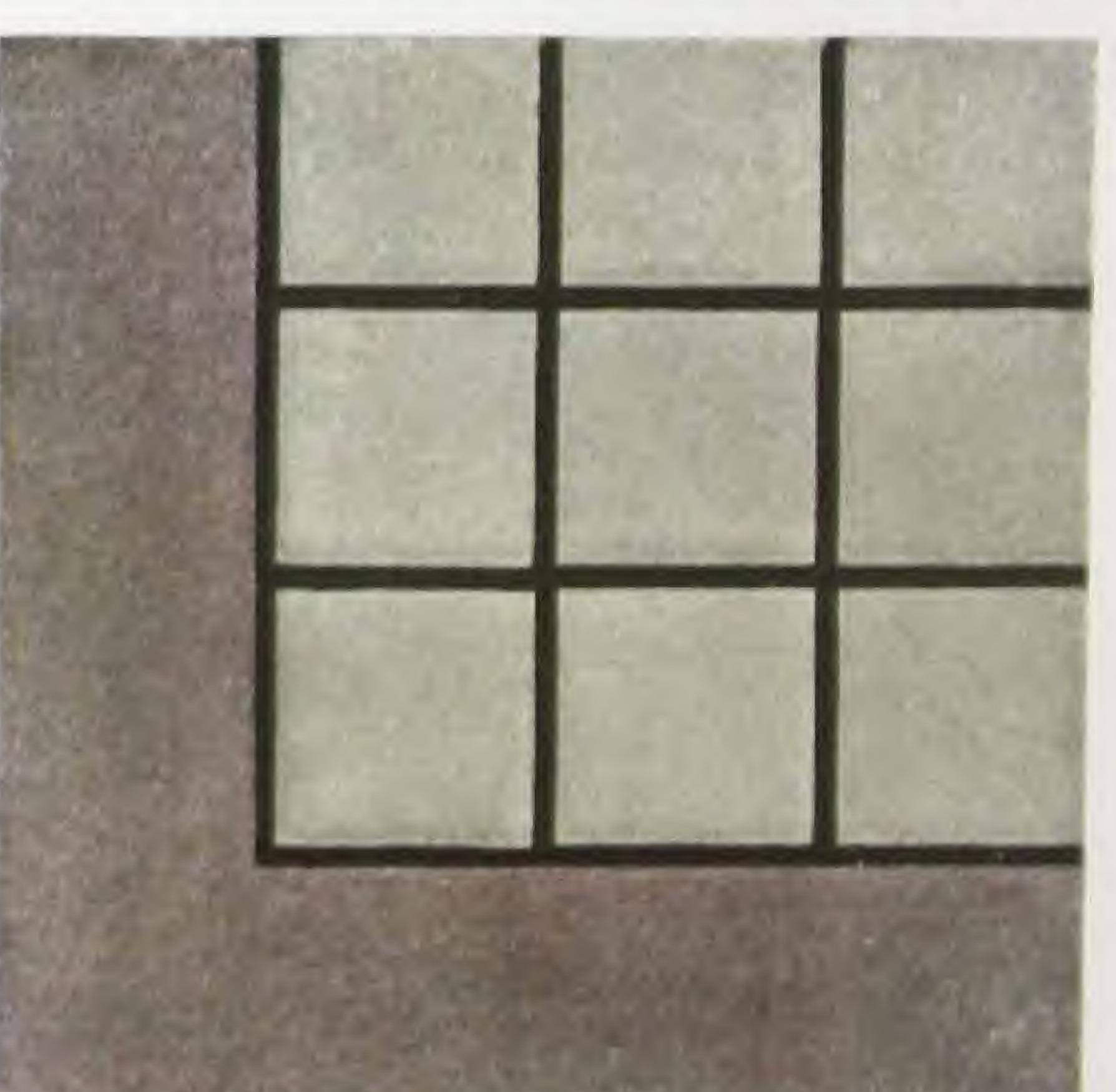
Marble Tile Inlaid M62, Gray Jaspé 13



Dark Gray Jaspé 15, Plain Black 27



Inset Tile Inlaid T41, Plain Black 27

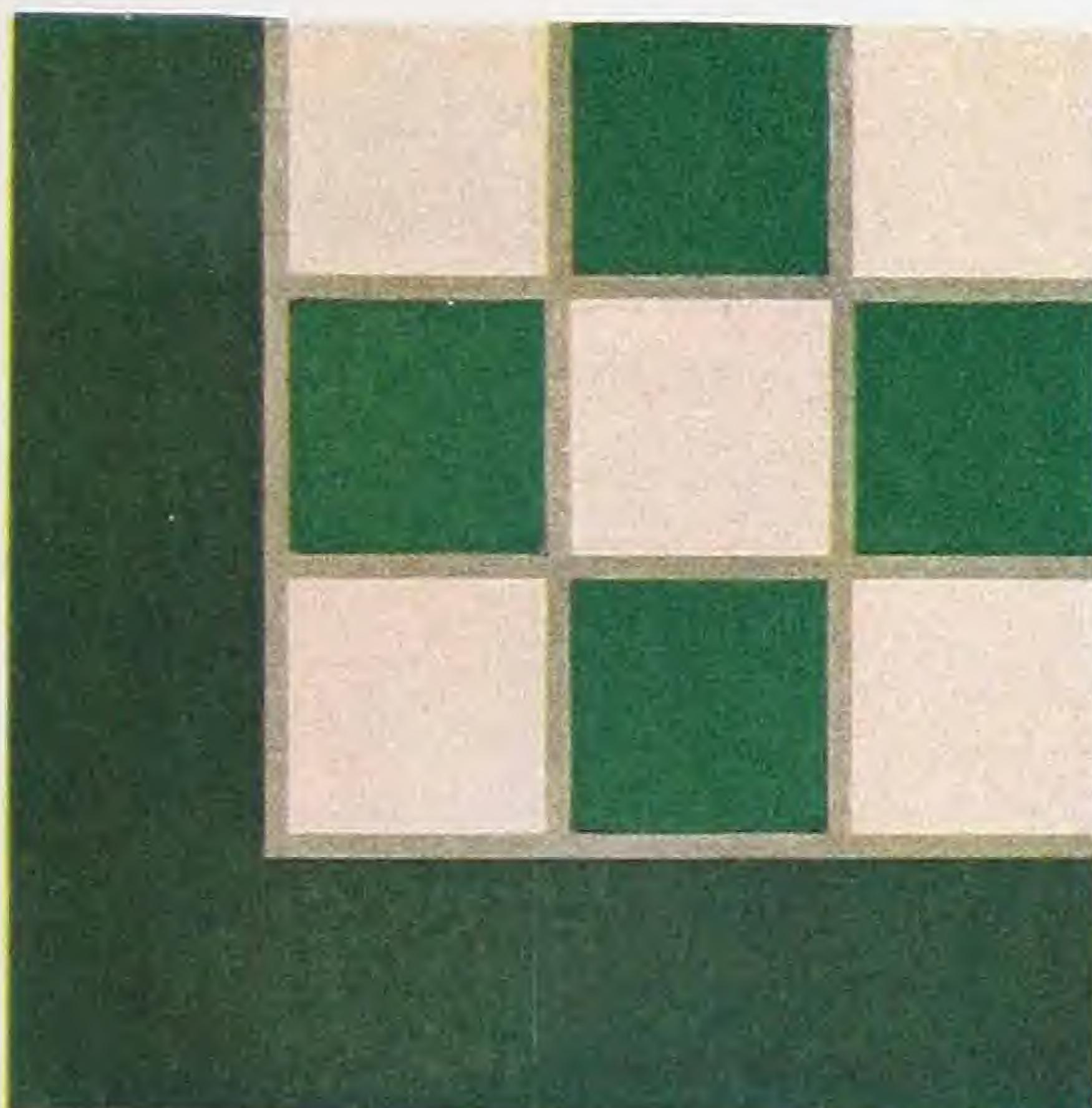


Inset Tile Inlaid T42, Plain Gray 22

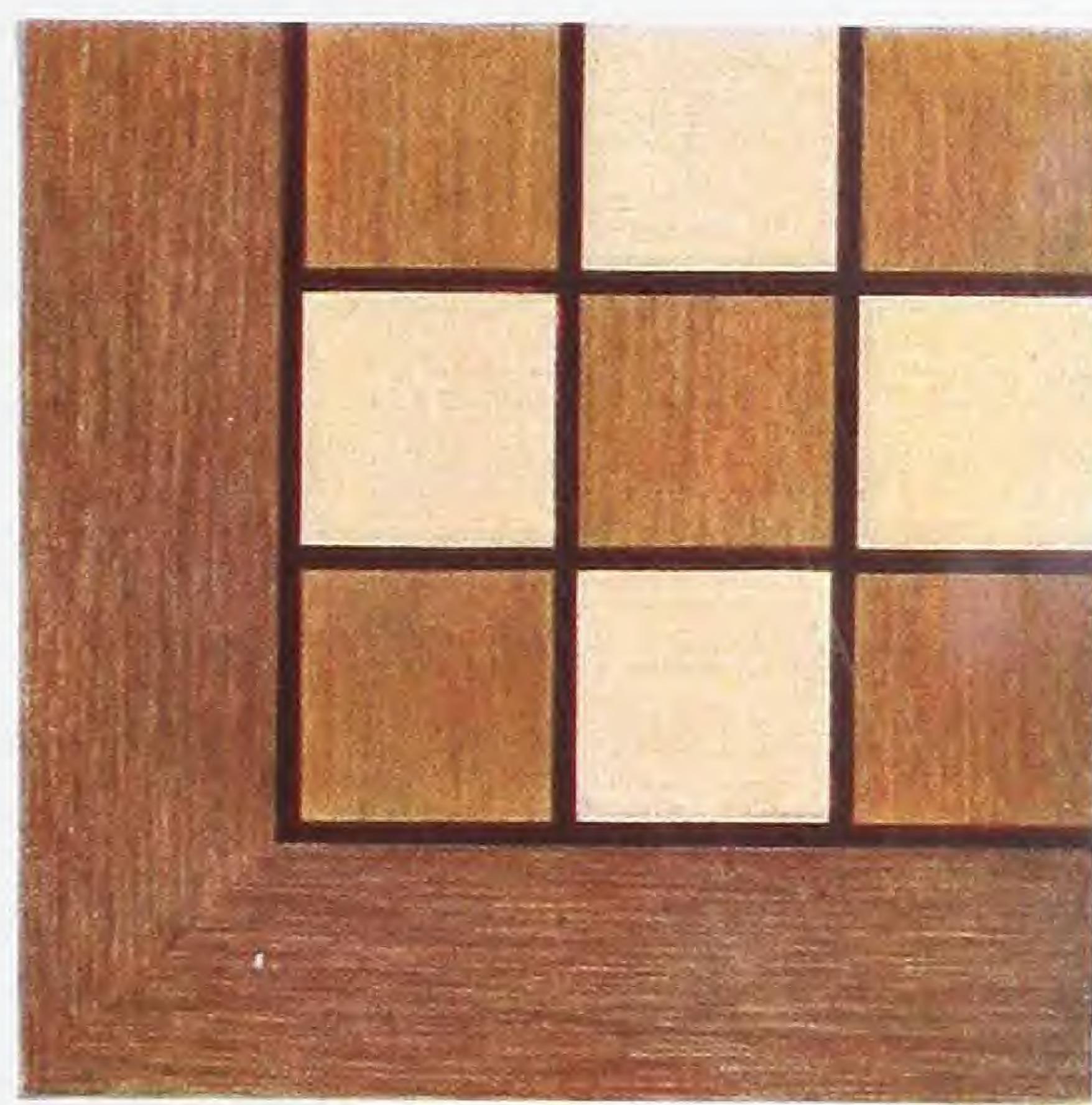


Bordered linoleum floors are particularly appropriate for private offices, specialty shops, banks, restaurants, hotels, theater lobbies, libraries, and similar places where a handsome individual floor would be a definite asset. The colorplates here show but a few of the distinctive floor designs possible by choosing appropriate fields and borders from the many patterns and colorings in Armstrong's Linoleum.

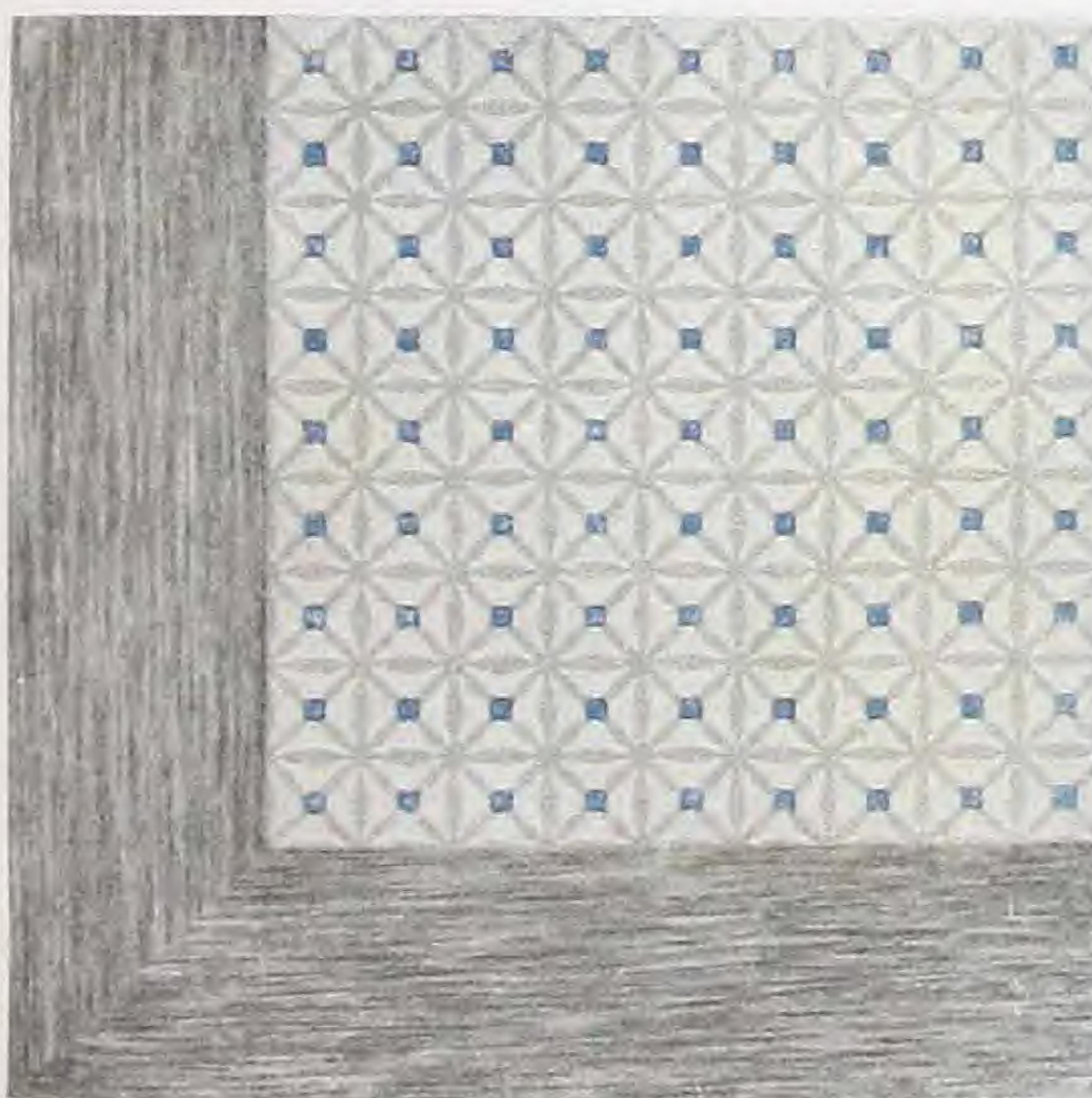
Write to the Bureau of Interior Decoration, Armstrong Cork Company, Linoleum Division, Lancaster, Pa., for suggestions for specific color schemes. State the color plans for the interior trim of the room, the size of the room, and the furnishings to be used.



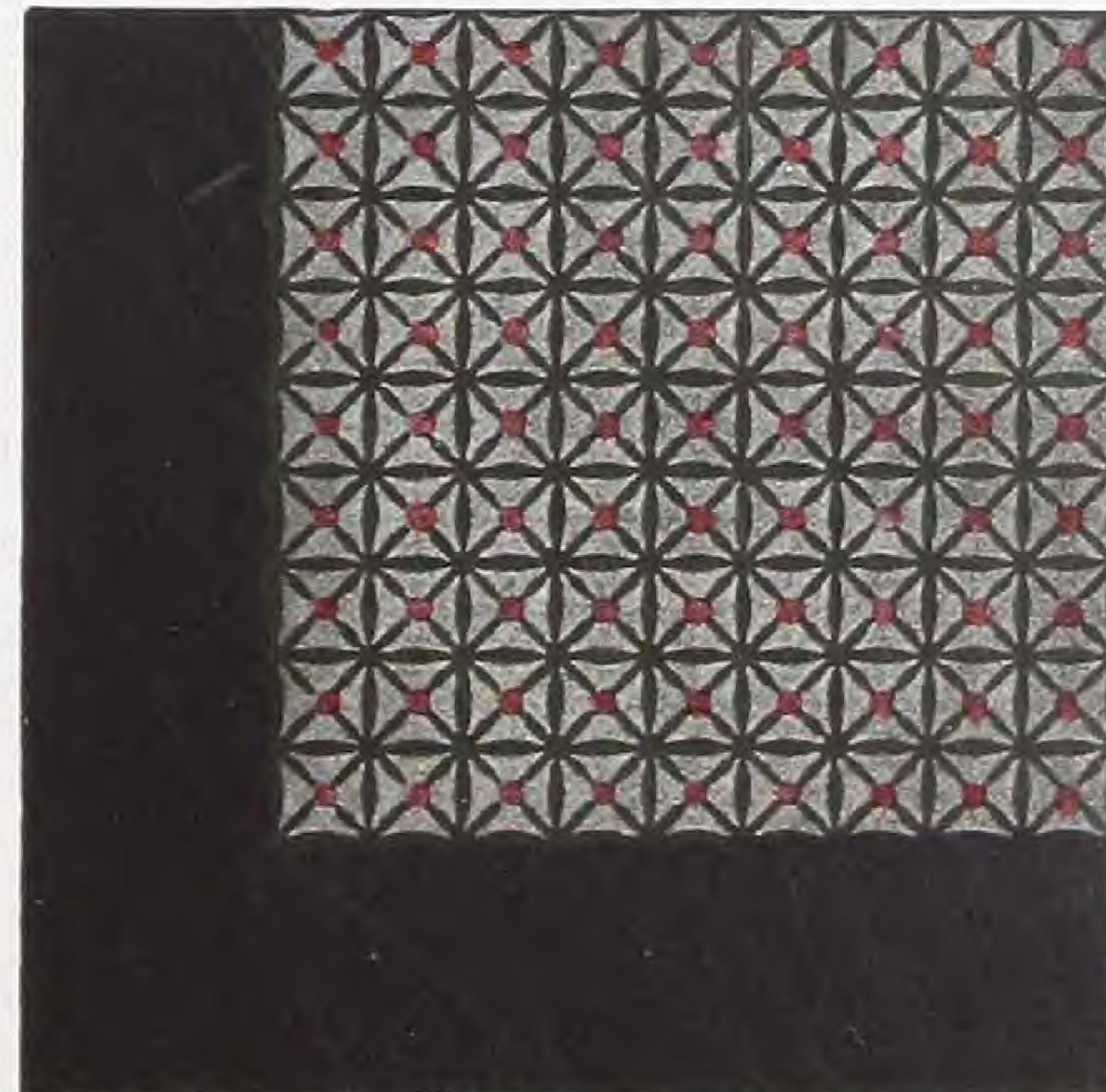
Inset Tile Inlaid T46, Plain Green 21



Parquetry Tile Inlaid P80, Brown Jaspé 17



Moulded Inlaid 3081, Light Gray Jaspé 13



Moulded Inlaid 3080, Plain Black 27

Printed Linoleum and Linoleum Rugs

IN ADDITION to the foregoing, the Armstrong Line contains ninety designs in D and E gauge printed linoleum, twenty-six patterns in printed linoleum rugs and six patterns in inlaid linoleum rugs. To see colorplates of all the 321 patterns and colorings of linoleum in the Armstrong Line, write for the Pocket Size Pattern Book. A copy will be mailed, free, upon request.

Cork Carpet

ARMSTRONG'S Cork Carpet is manufactured expressly for use in churches, theaters, libraries, museums, and other places where a soft, sound-deadening floor is required, which at the same time will withstand heavy wear. The same materials are used in cork carpet as in plain linoleum, except that the cork is coarser and less firmly compacted; hence it retains its natural elasticity to a greater degree, and possesses the resilience of a thick carpet.

Cork carpet is made two yards wide only, in two colors as illustrated. Each color is made in two grades: XX, gauge .230 inch, average net weight 6.5 pounds per square yard; and XXX, gauge .264 inch, average net weight 7.5 pounds per square yard.

See page 43 for special instructions regarding the use and care of floors of Armstrong's Cork Carpet.



Brown Cork Carpet—Color No. 30



Green Cork Carpet—Color No. 32

How to Choose Linoleum

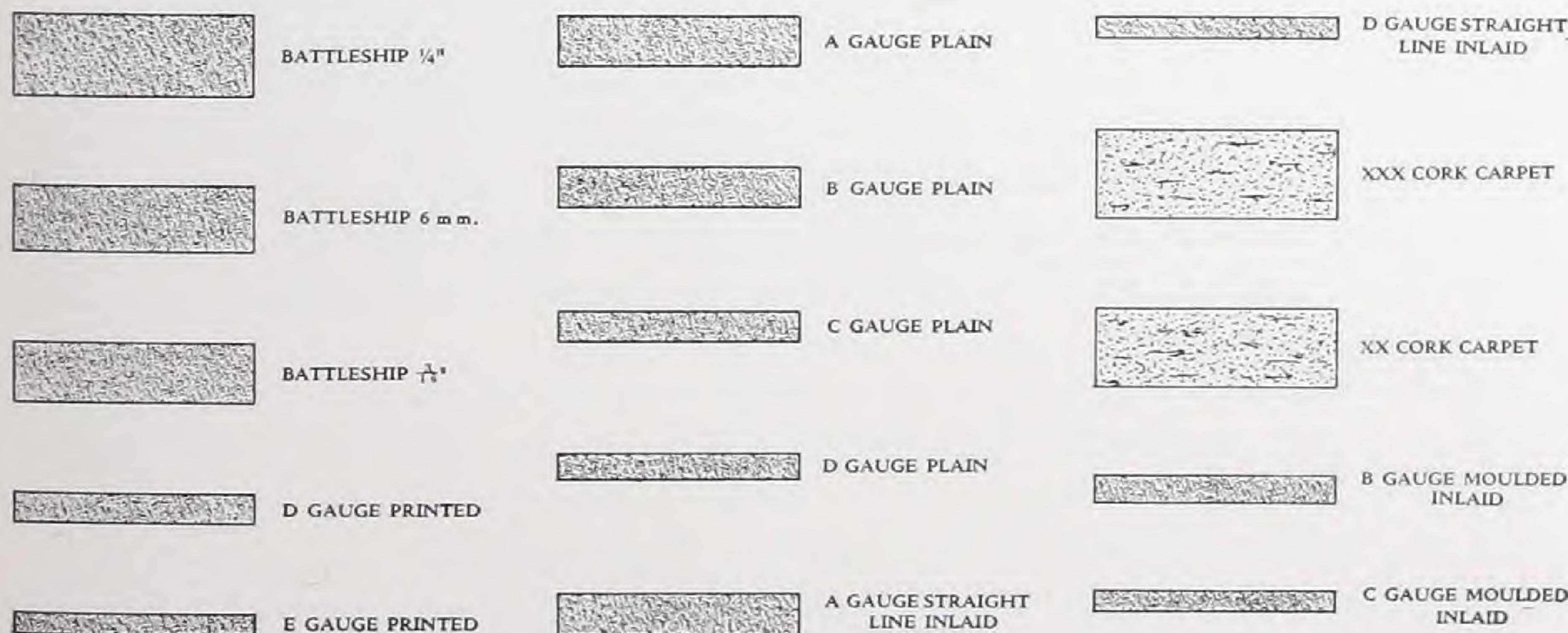
ALL Armstrong's Linoleum is manufactured to meet the highest possible standards of quality. Whatever the gauge and pattern you buy, you can be sure that it is made of first-quality materials.

For halls, corridors, and rooms where the traffic is unusually heavy, it is generally advisable to use a battleship thickness of plain or jaspé linoleum. If properly installed, and given the right kind of care, there is practically no wear-out to a battleship linoleum floor.

For most places, where the wear is not severe, an A or B gauge linoleum is heavy enough. For floors that are to be covered with fabric rugs, or where the wear is not heavy, the lighter gauges should give very satisfactory service. Choice of linoleum, therefore, will depend partly on traffic conditions, but mainly on design and coloring appropriate to the room.

For places where dirt is tracked in, remember that light colors show footmarks less than dark shades. Patterns with strong contrasts in color will be found especially desirable here. Always keep the floor darker than walls and ceiling. Use a plain and unobtrusive floor with figured walls. If the walls are plain, add interest by using a pattern in the floors. If ceilings are low and rooms small, use plain or jaspé, or small-figured inlaid linoleum in light colors. In large rooms, good-sized patterns in deeper tones may be used.

The chart below shows the gauges in which Armstrong's Linoleum is made. These are manufacturing standards; in actual linoleum a variation of .005-inch either way from standard is permissible.



The Installation of Linoleum Floors

LINOLEUM itself is more than fifty years old. Yet the laying of linoleum as a permanent floor is a comparatively new development. Most people have in the past thought of linoleum as a temporary floor covering, instead of a real floor, largely because methods of laying had not been devised to insure the maximum wear and best possible appearance.

For years linoleum has been laid by the handy man in the local store, and not by really skilled mechanics trained to do the work properly. For this reason, the traditional way to lay linoleum has been to unroll the six-foot-wide strips of linoleum on the floor, and trim them to fit as closely to the walls as possible, butting and matching the seams. Sometimes the seams and edges of the linoleum are bradded, to prevent "kicking up."

The limitations of this method of laying can be discerned at a glance. Not only is the appearance, as a rule, unsatisfactory, but unsightly bulges are apt to develop which very shortly break through when the linoleum is walked on.

Inasmuch as all new linoleum has a tendency to expand or "grow" when unrolled and walked on, this buckling can be guarded against only by cementing the linoleum firmly to the floor. Cementing linoleum *directly* to a wood floor, however, is not recommended, for this reason: The boards of a wood floor are subject to seasonal contraction and expansion, according to changes in temperature and humidity. The boards contract in winter when the dry furnace heat is on and the cracks between them grow wider. Linoleum cemented solidly to a wood floor is thus subjected to such a strain at these points of contraction that breaks in long parallel lines directly over the cracks between the floor boards sometimes appear in the surface of the linoleum.

To protect the linoleum from this movement, and at the same time hold the linoleum securely to the whole floor surface, a lining of builders' deadening felt should be laid between the floor and the linoleum. The whole area of this felt is pasted to the floor, and the main area of the linoleum is pasted to the deadening felt lining, with seams and edges of the linoleum sealed with a waterproof cement.

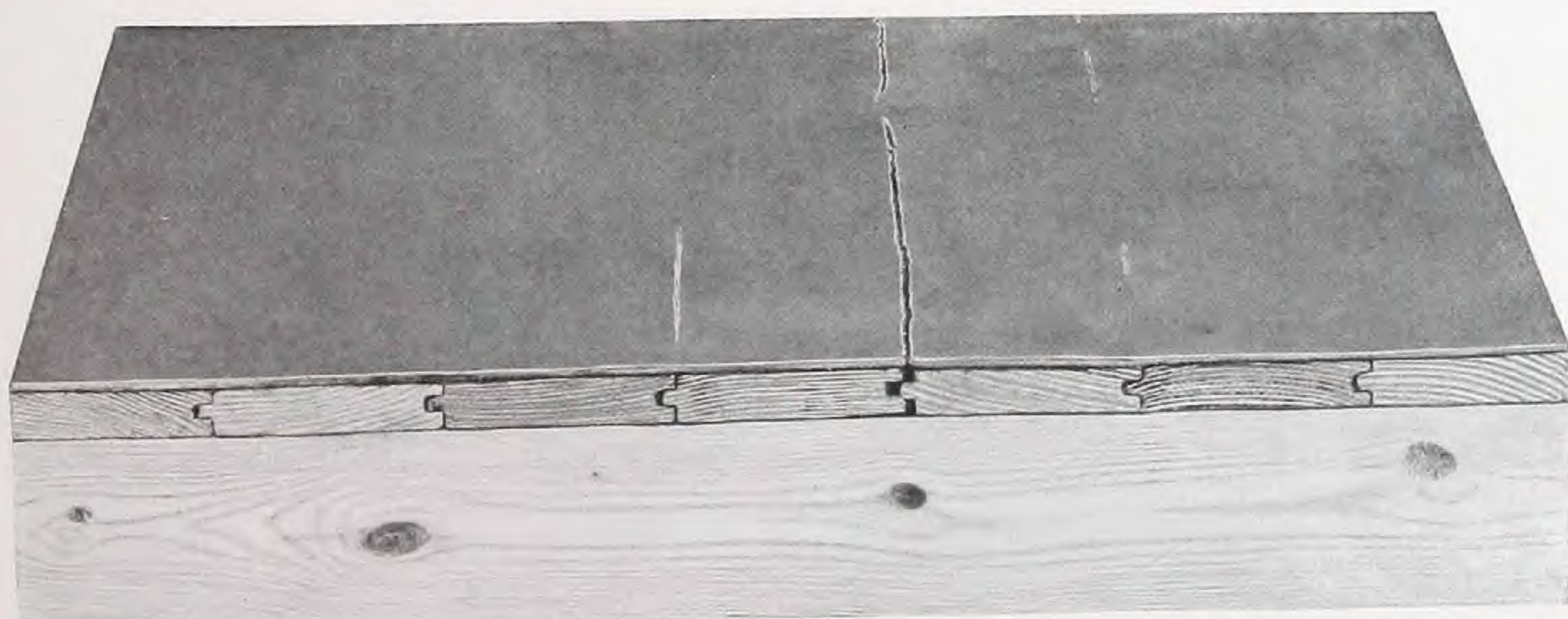
Then when the cracks in the wood underfloor open up, the fibrous texture of the deadening felt permits it to move with the wood floor—expand or even part slightly at its under surface, while its upper surface remains tightly and solidly cemented to the linoleum.

This improved method of laying linoleum over a deadening felt lining has been used by good linoleum contractors for a number of years,

and the results have been uniformly satisfactory, wherever the work has been done properly. The linoleum becomes a firm, lasting floor. As all seams and edges of the linoleum are sealed with waterproof cement, the floor is also watertight, and to all appearances seamless. In addition, the deadening felt lining makes the floor more resilient, hence quieter and more comfortable.

There is a final advantage in using a felt lining. The felt makes it possible often to use linoleum in temporary quarters and later remove it to a permanent location in as good condition as it was when new. Linoleum cemented directly to the floor can rarely be removed without tearing. A strong upward pull on linoleum laid over deadening felt, however, parts the felt lining and allows the removal of the linoleum entire. The deadening felt adhering to the floor and to the back of the linoleum can readily be soaked off with warm water, as a water-soluble paste is used for the laying. Then the linoleum can be relaid to look as good as new.

The use of a deadening felt lining when laying linoleum over concrete is optional. As expansion and contraction in the concrete floor slab take place uniformly and over the whole area, the protection of the linoleum by the deadening felt is not so necessary as in the case of wood. A lining of deadening felt does, however, add warmth, resilience, and quietness to the floor and makes it easier to remove the linoleum from the concrete base, if that should ever become desirable.



This section of a linoleum floor illustrates the damage that frequently results when the linoleum is cemented directly to the floor-boards. In this actual test case, the boards shrank and the cracks between them opened up, when the section of floor was placed in a warm, dry room for several days. The linoleum could not hold the floor-boards together, and, as may be readily seen here, broke along three of the cracks where the strain was too great. Another test floor, exactly similar except for a lining of deadening felt pasted between floor-boards and linoleum, subjected to the same conditions, was entirely uninjured, even though the cracks opened up just as wide as in the first case.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

Steps in Laying Linoleum

Fig. 1. Applying Paste. A quantity of paste is poured out on the felt and is spread evenly with the paste-spreader, to within about four to six inches of where the seams in the linoleum will come. In pasting and laying the felt the paste is spread on the wood floor in this same manner, except that no space is left unpasted.

Fig. 2. Cutting Linoleum Seam with Knife. In laying strips of plain and jaspé linoleum, the edges are overlapped slightly. After the linoleum has all been pasted down and rolled until it has set, a workman cuts through both thicknesses of linoleum with a sharp linoleum knife. To insure a straight cut he should use a straight-edge, or draw a guide line to follow. This makes a perfectly fitted joint, which becomes practically invisible when cemented and rolled thoroughly with the 150-pound iron roller.

Fig. 3. Cutting Linoleum Seam with Special Tool. The blade of a linoleum knife is inserted in the tool and adjusted so as to cut clear through the overlapping edges of both strips of linoleum at one stroke. The guide flange of the tool is placed against the overlapping edge of linoleum, and while one operator holds it firmly in position, another workman pulls the tool the length of the seam. This tool saves considerable time on large jobs.

Fig. 4. Waterproofing a Linoleum Seam. After the pasted portion of linoleum is well rolled and set and the seams are cut to fit, the edges of the strips are lifted and waterproof cement is applied to the felt as far back as the paste will permit. Cementing insures watertight seams that will not loosen or break open when subjected to heavy traffic.

Fig. 5. Rolling a Linoleum Seam. Thorough use of the 150-pound roller on all seams and along the edges of the linoleum floor secures good adhesion and makes the seams practically invisible. Note how close the workman gets to the wall with this roller.

Preparation of a Concrete Base to Receive Linoleum

New concrete floors should be brought to a true, even and level surface, preferably trowel-finished. Allowance for the thickness of the linoleum and felt lining should be made in the level of the concrete.

New concrete must be thoroughly dry before linoleum is laid. Moisture in the concrete cannot escape through the linoleum and will collect on the surface of the concrete, gradually disintegrating the linoleum cement and possibly damaging the linoleum. *For the same reason linoleum is not recommended for basement use or for any floor in direct contact with the ground, because moisture cannot be entirely eliminated.* New concrete floors can sometimes be waterproofed to receive linoleum during the process of construction. Write for waterproofing specification.

New or old, the concrete floor must be broom swept and the expansion joints filled with plaster of Paris. Better adhesion usually obtains between concrete and linoleum, or concrete and felt, if the concrete is first treated with a reliable concrete hardener.

Preparation of a Wood Base to Receive Linoleum

Considerable floor expense can often be saved by laying an underfloor of second grade tongued and grooved lumber, and then cementing down linoleum over a felt lining. The ideal way to lay the underfloor is diagonally, nailing the boards to every joist with both blind and face nailing. Flooring lumber should be absolutely dry, thoroughly seasoned, free from loose knots, and preferably of $4\frac{1}{2}$ -inch face or less.

To prepare an old wood floor for linoleum, see that all boards are sound and solidly nailed. Smooth down knots and rough spots, remove nails and tacks, and sweep off dust and dirt. Wide cracks should be filled with crack-filler; in extra-wide cracks thin strips of wood may be inserted.

Materials Required to Lay a Permanent Linoleum Floor

Linoleum—In estimating the linoleum, allowance must be made for waste, as linoleum comes in six-foot-wide strips, and patterned linoleum must be matched. Running the linoleum strips across the boards may also mean a little more waste, but it helps to prevent extra strain on the linoleum seams when cracks open in the underfloor.

Deadening Felt—Felt should be unsaturated deadening felt, not rosin-sized building paper. Felt should be $1\frac{1}{2}$ pounds per square yard.

Paste—Armstrong's Linoleum Paste (nonwaterproof) is recommended for pasting felt to the floor and the main area of the linoleum strips to the felt. This paste is inexpensive and its adhesive qualities are especially strong. It is heavy-bodied and unusually quick drying. Contains nothing injurious to linoleum. A gallon of paste covers about 100 square feet. When linoleum is pasted over felt, which likewise is pasted down, estimate a gallon for each five yards of floor area.

Waterproof Cement—*Waterproof cement should be used for sealing all seams, edges, and openings in linoleum.* Armstrong's Waterproof Linoleum Cement is recommended as an inexpensive cement, as nearly 100 per cent. waterproof as can be made. This cement is powerful, very fast-drying, and contains no injurious materials. One gallon is sufficient for forty square yards of linoleum.

Always avoid pastes and cements containing alkaline salts, such as sodium carbonate (soda), sodium silicate (water glass), and sodium borate (borax). These chemicals are not water-repellent, but when damp saponify the oxidized oil in linoleum, causing it to deteriorate.

How to Lay the Linoleum

Careful reading of this section will tell you how your merchant should lay your linoleum as a real floor. For detailed instructions, to superintend or do the laying yourself, send for the handbook, "Detailed Directions for Laying and Caring for Linoleum." *For laying specifications for your architect, write for "Armstrong's Linoleum Floors."

After the floor has been carefully leveled and cleaned, strips of deadening felt are cut to fit the floor (crosswise to the boards, if the sub-base is of wood). A thorough coating of paste is applied to the floor with the paste-spreader as shown in Figure 1 (page 36). As rapidly as the floor is pasted, the felt strips are fitted quickly into position and rolled thoroughly with a heavy iron roller, to secure perfect adhesion and prevent air-pockets. See that the felt strips are butted tightly; overlapping edges or gaping seams show up as ridges and hollows in the linoleum.

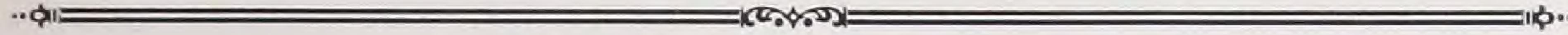
Next, the linoleum strips are cut. On a wood base the linoleum strips also run crosswise to the boards, unless the floor is on the diagonal, in which case the linoleum can be laid either way of the room. In cutting and fitting the strips of linoleum the layers should see that the seams fall in the least conspicuous places, and not directly over seams in the felt.

Paste is spread on the felt as on the floor. A strip four to six inches wide on each side of the line where each linoleum seam will come, and a four to six-inch strip around baseboards and all projections, are left unpasted. These areas are later covered with waterproof cement, to seal all seams and edges. The linoleum strips are fitted in place as fast as the paste is applied, each strip overlapping the preceding one about $\frac{1}{2}$ - to $\frac{3}{4}$ -inch, if the linoleum has no pattern to match. Figured linoleum should be matched and the edges of the linoleum strips butted. The roller is used to insure good adhesion at all points between felt and linoleum.

The next step is to cut and fit the seams. A workman cuts through the overlapping edges of the linoleum strips with a sharp knife, as shown in Figure 2, or uses a seam-cutting tool as in Figure 3 (page 36).

After the linoleum seams have been cut to fit tightly, and the

*For your own protection use this specification with your building plans: "The linoleum contractor shall furnish for the floors indicated on the drawings Armstrong's (....insert kind and gauge....) Linoleum No. All linoleum floors shall be laid in accordance with the Armstrong standard laying specifications."



trimmings removed, the unpasted edges of the linoleum are lifted up as in Figure 4, and a good heavy coating of waterproof cement is applied. The linoleum is smoothed back into position and rolled thoroughly.

When Armstrong's Waterproof Linoleum Cement is used, weighting of seams is unnecessary, as the cement is made especially fast-drying so that it sets while the seams are being rolled. After rolling, all dirt should be cleaned off, and the linoleum waxed and polished. In a new building, linoleum should be covered with building paper for protection.

Laying Linoleum without Felt

Linoleum should never be cemented *directly to wood*. Where, contrary to the foregoing statement, linoleum is cemented directly to a wood floor and later contraction of the boards results in breaking the linoleum, the manufacturer cannot accept responsibility for goods so damaged.

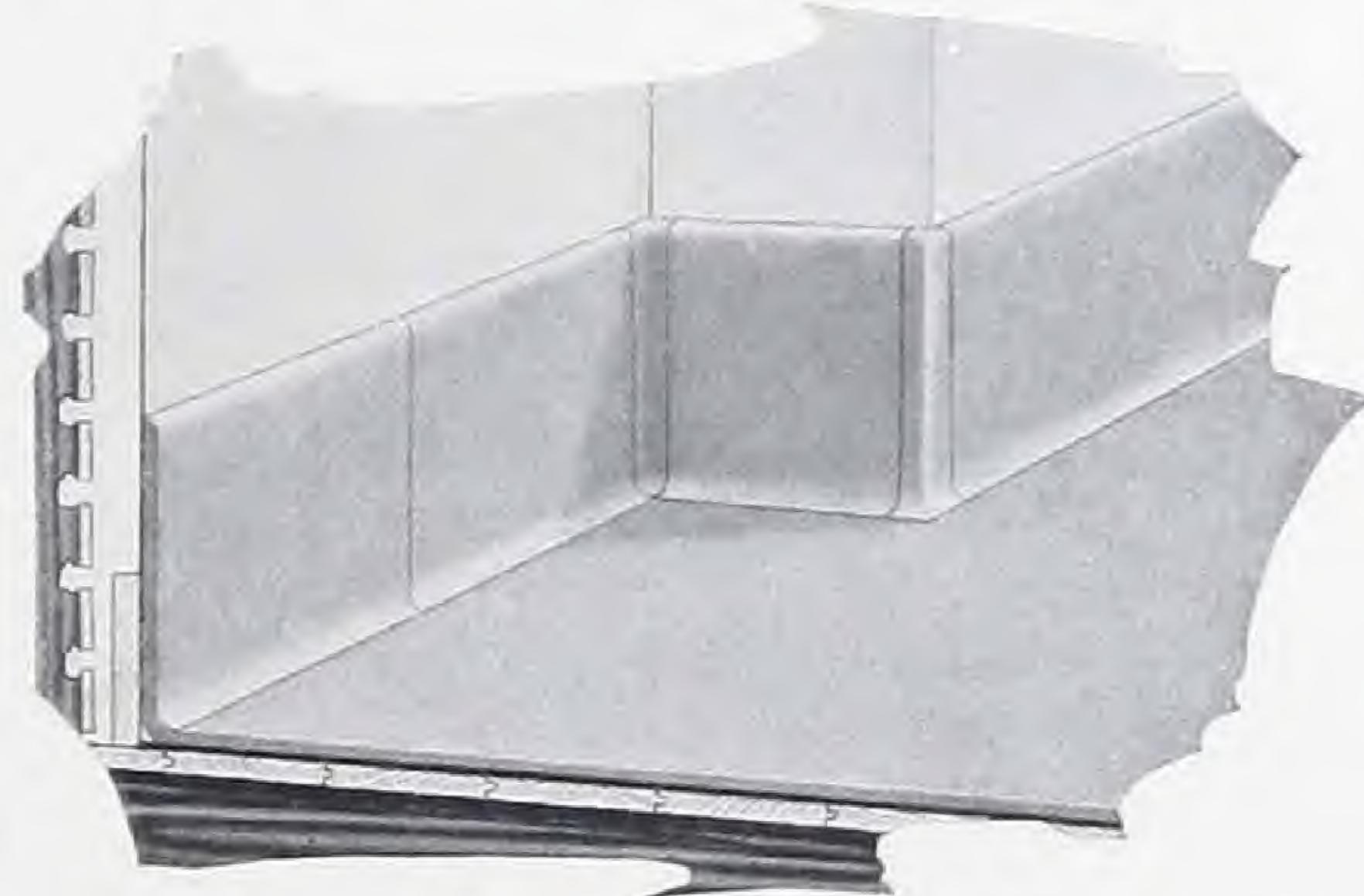
On concrete floors which are trowel-finished, linoleum may be cemented direct. Occasionally contractors state that a felt lining makes it safe to lay linoleum over damp concrete. *Under no circumstances is linoleum recommended for damp concrete, either with or without felt.*

Laying Linoleum Floors with Borders

In laying a bordered linoleum floor, as illustrated on pages 30 and 31, the main area or "field" should be cemented to the felt first, proper space being left all around the room for the border. Use waterproof cement entirely for the border. Directions are given in "Detailed Directions for Laying and Caring for Linoleum."

Linoleum for Stair-treads

When using linoleum for stair-treads, the linoleum should first be cut into mats the exact size of the steps and then cemented in place. Edges of the steps should be protected with a nosing.



Armstrong's Linoleum Sanitary Cove and Base used as a wall-finish with a floor of battleship linoleum.

Linoleum for Desk Tops

A special smooth-finish linoleum is now made for desk tops, table tops, and counter tops. Linoleum makes a quiet, resilient writing-pad or working surface that does not stain readily or show scratches. Several manufacturers finish desks, tables, counters, etc., with linoleum tops.

Linoleum Cove and Base

Armstrong's Linoleum Cove and Base is a sanitary wall trim, made in brown, green, and dark gray. It is an excellent finish for battleship linoleum floors, where proper provision for installing it can be made when the walls are erected. Write for samples.

How to Care for Linoleum

NEXT to good laying, the care accorded a linoleum floor is largely responsible for the service it gives. Scrubbing with harsh soaps and cleaning agents strong in alkali is injurious to linoleum and shortens its life materially. Ordinary wet mopping frequently does little more than smear the dirt about over the surface and results in a dull, dingy look.

Instead of trying to keep a linoleum floor clean by daily mopping with a strong soap solution, a far more pleasing appearance and much longer life may be had by waxing and polishing the linoleum when it is first laid, and thereafter keeping up the polish regularly. In fact, not only does waxing and polishing give the linoleum a beautiful, uniformly colored polish, but it reduces daily care to the minimum task of going over the floor with a soft brush or broom to remove surface dust, and then restoring the polish with a cloth or polishing brush.

For large areas of linoleum it is economical to invest in regular linoleum maintenance equipment. This equipment consists of an electric floor-scrubbing and -polishing machine, mops, pails, cloths, and a supply of linoleum soap and liquid floor wax. Everything can be bought for less than \$150.

One of the most satisfactory floor machines is the International, made by the International Floor Machine Co., 220 W. 19th St., New York City. Other good floor machines are made by the Kent Company, Rome, N. Y., and the American Scrubbing Equipment Company, Hannibal, Mo.

Cleaning, Waxing, and Polishing

When you have an old, dirty floor to recondition, the first step is to scrub it with the machine. The swiftly rotating, stiff bristled scrubbing brush does the work far more efficiently than can be done by hand, and it is never necessary to use strong soaps. A lukewarm suds made with a mild soap, such as Ivory in the chip or flake form, removes all dirt, including the blackened streaks or mop marks along the baseboard. The dirty water can be removed with an ordinary cotton floor-mop and pail, but the most efficient method is with the patent floor pan and rubber squeegee. This takes up water and dirt, leaving the linoleum as clean and colorful as on the day it was laid.

The next step is waxing. Paste wax can be used, but liquid wax is easier and more economical to apply. One gallon of liquid wax covers about 1,000 square feet of linoleum on the first application, and about 1,200 square feet on succeeding waxings. Any standard floor wax is satisfactory, such as Johnson's Liquid Wax, made by S. C. Johnson & Son, Racine, Wis., or Old English Linoleum Wax, A. S. Boyle Co., Cincinnati.

An easy way to apply wax on a large floor is to pour it into a pail,



Fig. 1



Fig. 4

How to Scrub, Wax, and Polish Linoleum

Fig. 1. First Step, Scrubbing. Pour out a small quantity of lukewarm suds, made with a mild soap, and run the machine slowly over the floor until the dirt has been thoroughly loosened.

Fig. 2. Second Step, Removing Dirt and Water. An ordinary cotton mop can be used, but a metal floor pan and rubber squeegee are most satisfactory. The dirty water is drawn into the pan with the squeegee as illustrated.

Fig. 3. Third Step, Waxing. Paste wax may be used but liquid wax is easier to apply. On a large floor, pour the wax into a bucket and immerse a clean cotton mop in it. Mop the linoleum until a thin coating of wax has been spread over the whole area. Work the mop first one direction, then the other, to insure complete coverage.

Fig. 4. Fourth Step, Polishing. Put the polishing brush on the machine and run over the floor slowly, first one direction, then the other. This brushes the wax into the linoleum and starts the polish. To finish, use the polishing pad.

Fig. 5. Daily Care. The janitor can keep a waxed and polished linoleum floor clean and bright by going over it every evening with a fine hair broom.

N. B. Electric floor machine used in these illustrations is the International, Model B.



Fig. 2

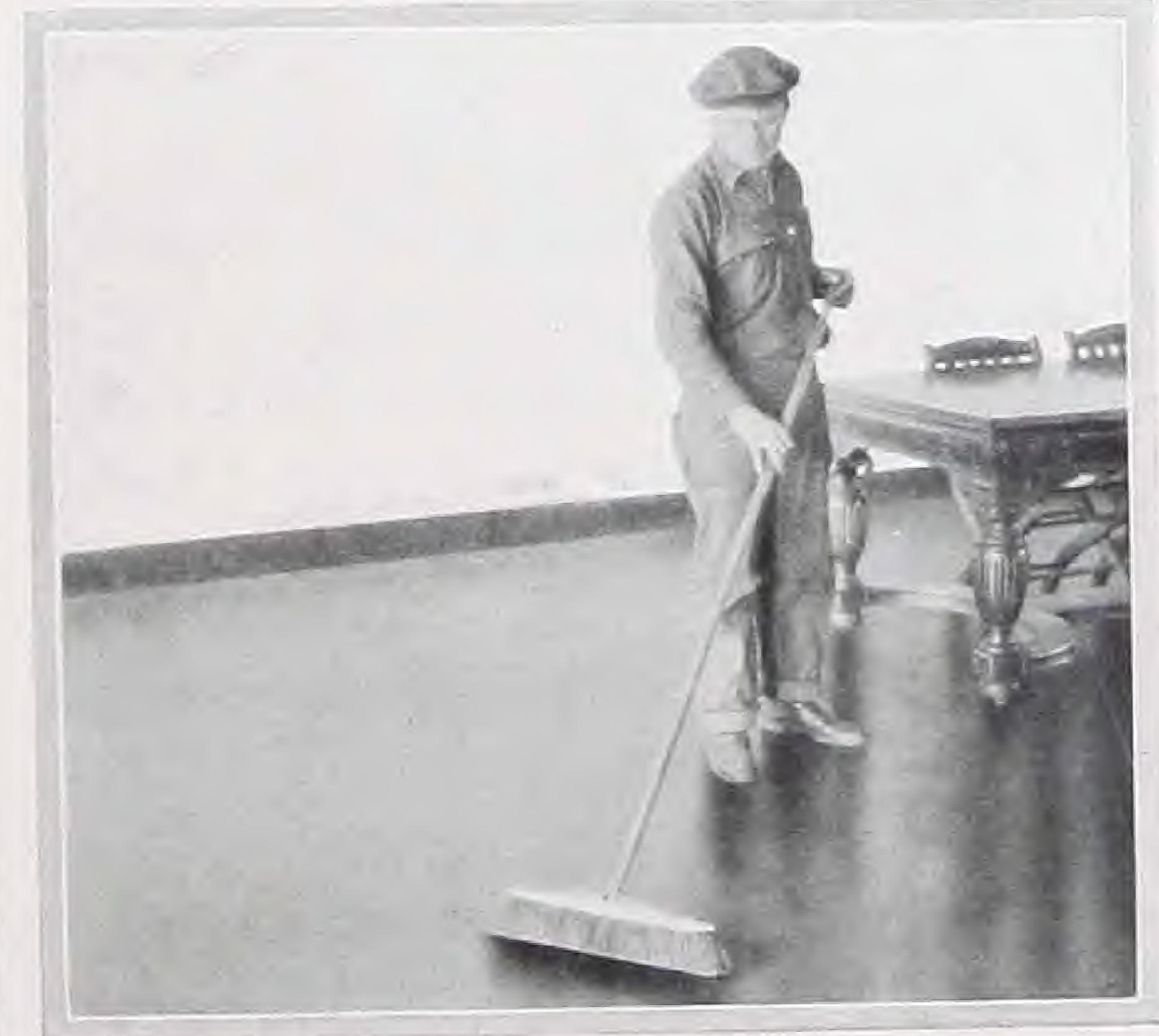


Fig. 5

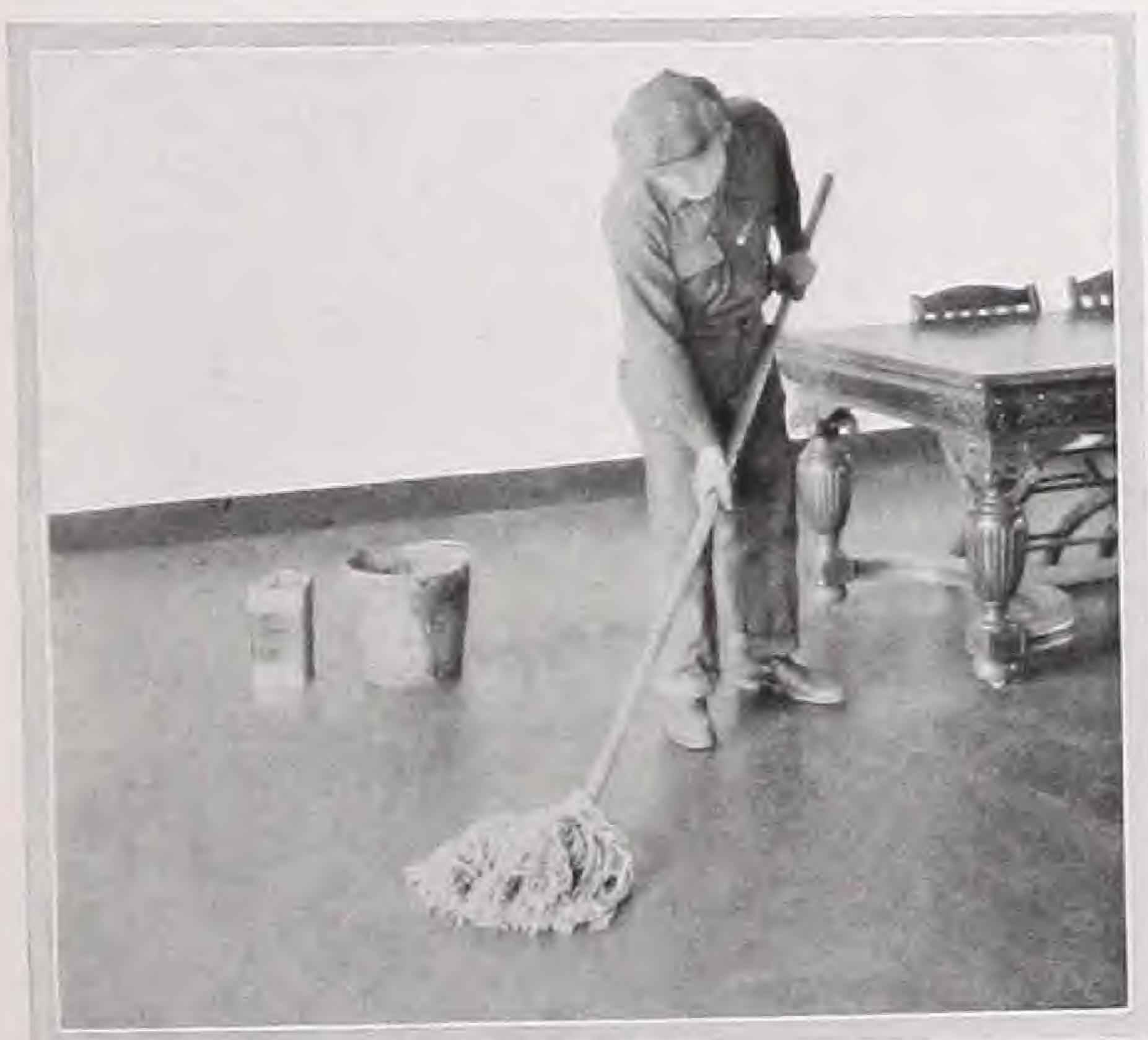


Fig. 3

dip a large, clean, cotton mop into it, and thus spread it over the floor. The wax should be applied in as thin a coating as possible, and the mop worked both ways over the floor to insure complete coverage. After using, the waxing mop should be cleaned by washing in a strong alkaline solution and rinsing in hot water.

After the wax has dried about five minutes, remove the scrubbing brush and place the finer-bristled polishing brush on the machine. Go over the floor, running slowly both lengthwise and crosswise of the floor to drive the wax into the body of the linoleum and bring up a good polish. Sweep off with a hair broom any dust and wax particles that the polishing has loosened. When a rich glossy finish is desired, place the polishing pad on the machine and go over the floor again. An experienced mechanic, with one helper and a machine, can scrub, wax, and polish a floor 10 x 15 feet in an hour's time. Where scrubbing is not necessary, the work, of course, goes much faster. In cleaning linoleum alone, the machine will soon pay for itself over the old hand method of scrubbing and mopping.

After a linoleum floor has been waxed and polished, daily cleaning is simple. The smoothly waxed finish prevents dirt being ground into the linoleum. Wet mopping is entirely unnecessary. Every evening the caretakers simply remove the surface dirt and dust that has collected during the day by sweeping with a fine hair broom. Rewaxing and polishing with the machine may be necessary on the main traveled areas once or twice a month. Running over the floor occasionally with the stiff brush attached to the machine will loosen dirt that sticks to the floor, so that it may be swept off with a broom. A complete scrubbing should be required not more than two, three, or four times a year.

Waxing Small Floors—Where the linoleum area is small, the easiest way to apply wax is with a cloth moistened in the liquid. Whether using paste wax or liquid wax, *do not put on too much*. If used too thickly, wax will not dry properly, and the excess will collect dirt and darken the linoleum. Too much wax is also likely to give the floor a greasy, unsightly appearance and make it slippery. Put the wax on evenly and be sure that none of the surface has been overlooked. Then rub the wax in *thoroughly*, polishing the floor with the electric machine, or a weighted brush such as is supplied by the wax manufacturers, or with a heavy brick wrapped in a soft cloth.

Brisk rubbing drives the wax into the linoleum, filling all the pores and practically sealing the surface against penetration by dirt. Furthermore, if desired, the wax may be brought up to a smooth, brilliant polish, which will not mar readily or be treacherously slippery.

Varnishing for Printed Linoleum

Printed linoleum or a printed linoleum rug will last longer if varnished. A good linoleum varnish should be *transparent* so as not to dis-color the pattern; *quick drying*; *waterproof*, so as not to turn white when

water is spilled on it; *tough*, to insure against chipping or cracking under traffic; and *alkali resistant*, to prevent harmful effects of strong soaps.

Varnishes recommended for printed linoleum are:

Amalie Linoleum Finish No. 2, L. Sonneborn Sons, Inc., New York.
Loog's Super Linoleum Preservative Varnish, Sidney Loog & Son, Phila.
Lucaspar, John Lucas & Co., Philadelphia.
Master Varnish, O'Brien Varnish Co., South Bend, Ind.
Rexpar, Sherwin-Williams Co., Cleveland.
Shedwater White Linoleum Varnish, Shedwater Products Co., New York.
Univernish, Murphy Varnish Co., Chicago.
Valspar, Valentine & Co., New York.

Printed linoleum, either varnished or unvarnished, may be kept clean with a damp cloth. If an unusual amount of dirt is tracked in, it may be necessary to scrub with mild soap and water.

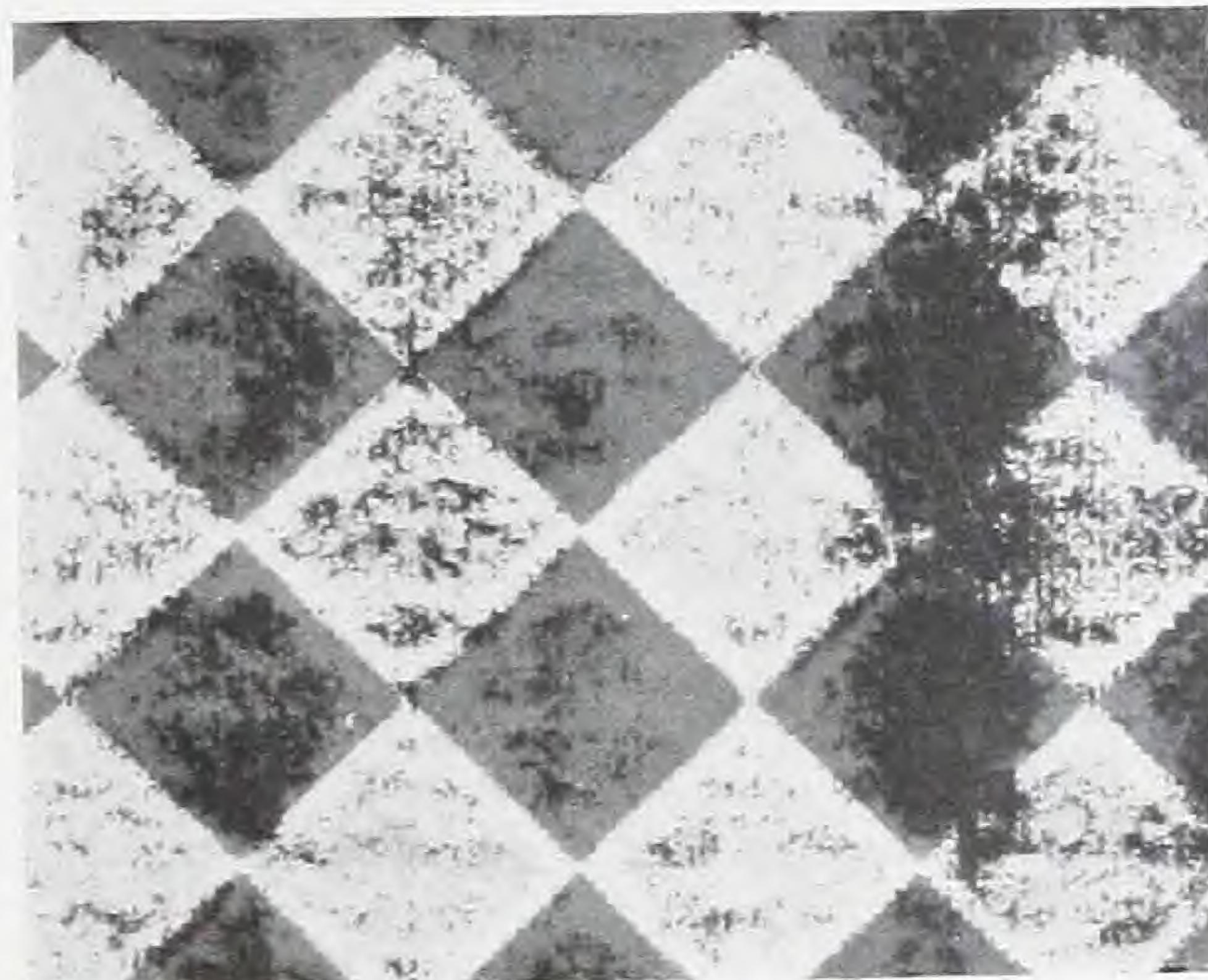
Do not varnish inlaid linoleum.
Waxing is the proper treatment for inlaid, jaspé, plain, and battleship linoleum.

Use No Alkali Soaps

Do not use alkaline soaps or scrubbing powders. They will harm any finely finished wood or linoleum.

Certain advertised soaps and washing powders, particularly, are not good for linoleum. These cleaning agents show alkaline reaction or contain caustics, and are positively injurious to paint, varnish, linoleum, or any substance made largely of linseed oil. In fact, more harm is done to linoleum by the use of too strong cleaning agents than in any other way. *The only safe practice is to avoid altogether the use of cleaning powders and strong scouring soaps.*

Automobile soaps, such as Amber Oil Soap, Flaxoap, and Mobe Soap, prepared especially to clean the high varnish finish of automobiles, are recommended for linoleum. The milder household soaps such as Ivory, Lux, Fab, and Octagon White Floating Soap are also good for linoleum, and may be had from your grocer or druggist. A more complete list of soaps that have been tested and found perfectly safe for use on linoleum will be sent on request.



This is an unretouched photograph of a piece of printed linoleum which was washed with a widely advertised household scrubbing powder. This cleaner wore through the painted design and its destructive effect on linoleum can be clearly seen from the illustration.

Care of Cork Carpet

Cork carpet is made of relatively large granules of cork by a process which preserves the natural elasticity to a high degree. As a result the surface of cork carpet is not so smooth nor dense as linoleum.

Cork carpet should never be laid on floors likely to be discolored with grease or stains, nor where dirt is tracked in directly from the street. It is made for libraries, churches, and museums, where a soft, sound-deadening floor is a first consideration. Where the wear is severe and the floor needs daily cleaning, battleship linoleum is recommended in preference to cork carpet.

Cork carpet should not be waxed nor varnished. It should be kept clean by sweeping with an ordinary broom or floor-brush. When washing becomes necessary, use warm suds made with a mild soap. Stains that soap and water will not remove can usually be taken off with sandpaper or steel wool.

But when cork carpet has been laid where considerable dirt is tracked in on it, cleaning can be lightened by varnishing the floor. After it is varnished, cork carpet may be cleaned by going over it with a damp cloth or mop.

Furniture on Linoleum

The velvety resilience of linoleum, one of its most attractive features, is due to the comparatively soft and yielding character of the cork and oxidized linseed oil of which it is made. Because linoleum is not dense like hardwood, tile, or marble, the roller casters ordinarily used on furniture are apt to cut a linoleum floor. These casters should be replaced with glass or metal sliding shoes which have a wide bearing surface and no rough edges. *Chairs fitted with Domes of Silence or other tips which have small bearing surfaces should always be refitted with the sliding shoes, as these tips frequently mar the linoleum.* Flat glass cups, made for the purpose, may be inserted under radiator feet and the roller casters of heavy furniture that is seldom moved. Sliding shoes and caster cups

can be had through practically any furniture or office equipment store, or may be ordered direct from the Onward Manufacturing Company, Menasha, Wis.

Always in moving furniture lift it clear of the floor to prevent scratching the linoleum, or if the furniture is too heavy to be lifted, protect the linoleum with a board, rug, or heavy piece of carpet. Remember to give your linoleum the same protection you would give to finely finished hardwood or rubber.



Sliding glass caster of the type recommended to protect linoleum from the legs of furniture.

Contract Department

ARCHITECTS, contractors, and owners contemplating the installation of linoleum floors are invited to use the services of the Contract Department. This department is prepared to make recommendations of gauges and patterns for specific purposes, supply technical information on the laying and care of floors, give the names of merchants equipped to install permanent linoleum floors in accordance with the Armstrong specifications, and work with owners, architects, or contractors in preparing estimates from blue prints. All service is rendered free of charge.

Bureau of Interior Decoration

FOR the benefit of owners, architects, decorators, and others interested in the use of linoleum as a decorative floor material, a Bureau of Interior Decoration, in charge of an experienced interior decorator, is maintained by the Company. This Bureau will gladly send samples of linoleum patterns and suggestions as to designs and color schemes that will be suitable for any particular problem. Information and recommendations as to the use of linoleum floors for rest-rooms, private offices, shops, and the various rooms of the home, especially, may be obtained at no cost or obligation whatever.

Cut Order Service

TO MAKE it possible for those interested in permanent linoleum floors to obtain the newer colorings and patterns in plain linoleum, the jaspés, and the artistic carpet effects in moulded inlaids, which may not be completely stocked by retailers, a Cut Order Department is maintained at the factory. This service enables the local merchant to order the exact amount needed for an installation of any coloring or pattern listed in this department. For a list of the patterns that are cut on order, write for the Armstrong Pattern Book or see a local Armstrong retailer.

The Armstrong Guarantee

EVERY yard of Armstrong's Linoleum is fully guaranteed and the Company will make good any piece that proves defective. Both in manufacturing methods and equipment the 45-acre plant at Lancaster, Pa., is probably the most modern in America. The ingredients are the best obtainable. The whole manufacturing process is under chemical control and supervised by experienced linoleum experts.

Recent Installations

ARMSTRONG'S Linoleum floors are giving satisfactory service in thousands of business and public buildings throughout the country. A few of the most important recent installations are:

Banks

Title Guarantee & Trust Co., Los Angeles, Calif.
Lake Shore Trust & Sav. Bank, Chicago, Ills.
Federal Land Bank, New Orleans, La.
Warren Inst. for Savings, Boston, Mass.
Bank of Detroit, Detroit, Mich.
Gotham National Bank, New York, N. Y.
Mellon National Bank, Pittsburgh, Pa.
Security Natl. Bank, Sheboygan, Wis.

Business Offices and Buildings

Hammond Lumber Co., Los Angeles, Calif.
Butterick Publishing Co., San Francisco, Calif.
Patterson Building, Fresno, Calif.
Curtis Leger Fixture Company, Chicago, Ills.
Popular Mechanics Building, Chicago, Ills.
Bankers Trust Building, Boston, Mass.
Standard Accident Ins. Co., Detroit, Mich.
Marshall Wells Co., Duluth, Minn.
Standard Oil Company, Omaha, Nebr.
Liggett Drug Co., New York, N. Y.
Bethlehem Steel Co., Bethlehem, Pa. [Texas.
San Antonio Telephone Exchange, San Antonio,
Old Natl. Bank Building, Spokane, Wash.

Churches

Presbyterian Church, Tuscaloosa, Ala.
Methodist Episcopal Church, Farmington, Me.
Holy Trinity Church, Baltimore, Md.
Trinity M. E. Church, Grand Rapids, Mich.
Mathewson St. M. E. Church, Providence, R. I.
Citadel Square Baptist Church, Charleston, S. C.

Hospitals

Lutheran Sanitarium, Denver, Colo.
Conn. Hospital for Insane, Middletown, Conn.
Clinton Co. Hospital, Frankfort, Ind.
St. Luke's Hospital, Davenport, Iowa.
Providence Hospital, Kansas City, Kans.
Essex Co. Tuberculosis Hosp., Middleton, Mass.
Buffalo City Hospital, Buffalo, N. Y.
Baptist Memorial Hospital, Memphis, Tenn.
U. S. Veterans' Hospital, Milwaukee, Wis.
Sheboygan Clinic, Sheboygan, Wis.

Hotels

Windemere Hotel, Chicago, Ills.
Hotel Commodore, New York, N. Y.
Tourist Hotel, Clatskamie, Ore.
Hotel Sterling, Wilkes-Barre, Pa.
Hotel Jefferson, Columbia, S. C.
Davenport Hotel, Spokane, Wash.
Ferris Hotel, Rawlins, Wyo.

Libraries

Univ. of Colorado Library, Boulder, Colo.
Public Library, West Haven, Conn.
Supreme Court Library, Atlanta, Ga.
Public Library, Cicero, Ills.
City Library, Detroit, Mich.
Carnegie Library, McAlester, Okla.
Pottsville Public Library, Pottsville, Pa.

Public Buildings

City and County Court House, Denver, Colo.
Rook Co. Court House, Stockton, Kans.
State Capitol Building, Helena, Mont.
U. S. Naval Home, Philadelphia, Pa.
Lackawanna Co. Court House, Scranton, Pa.
Beadle Co. Court House, Huron, S. Dak.
City Hall, Charleston, W. Va.

Restaurants

Central Dairy Lunch, Indianapolis, Ind.
Y. W. C. A. Cafeteria, Duluth, Minn.
B. & G. Sandwich Shops, St. Louis & Kansas
City, Mo.
Happy Rhones Club, New York, N. Y.
Baumoel's Restaurant, Cleveland, Ohio.
Bank Café, Altoona, Pa.

Schools

Benj. Ide Wheeler Hall, Univ. of Calif., Berkeley,
Calif.
College Admin. Bldg., Pomona College, Pomona,
Calif.
Leland Stanford Primary School, Sacramento,
Calif.
Journalism Bldg., Univ. of Mo., Columbia, Mo.
Miami Univ. Dormitory, Oxford, Ohio.
Univ. of Oregon, Eugene, Ore.
Boas Grade School, Harrisburg, Pa.
Scottish Rite Dormitory, Austin, Tex.
Law Building, Morgantown, W. Va.
Fond du Lac High School, Fond du Lac, Wis.
Manitowoc High School, Manitowoc, Wis.

Stores

Pfeifer Dept. Store, Little Rock, Ark.
King & Giffen, Miami, Fla.
Cherry Blossom Confectionery, Boise, Idaho.
O'Connor & Goldberg Shoe Store, Chicago, Ills.
Menter Company, Terre Haute, Ind.
Woolf Bros. Clothing Store, Wichita, Kans.
O'Donnell Candy Shop, Holyoke, Mass.
Owl Drug Co., Hattiesburg, Miss.
Metropolitan Jewelry Co., San Antonio, Texas.
Grote-Rankin Co., Seattle, Wash.

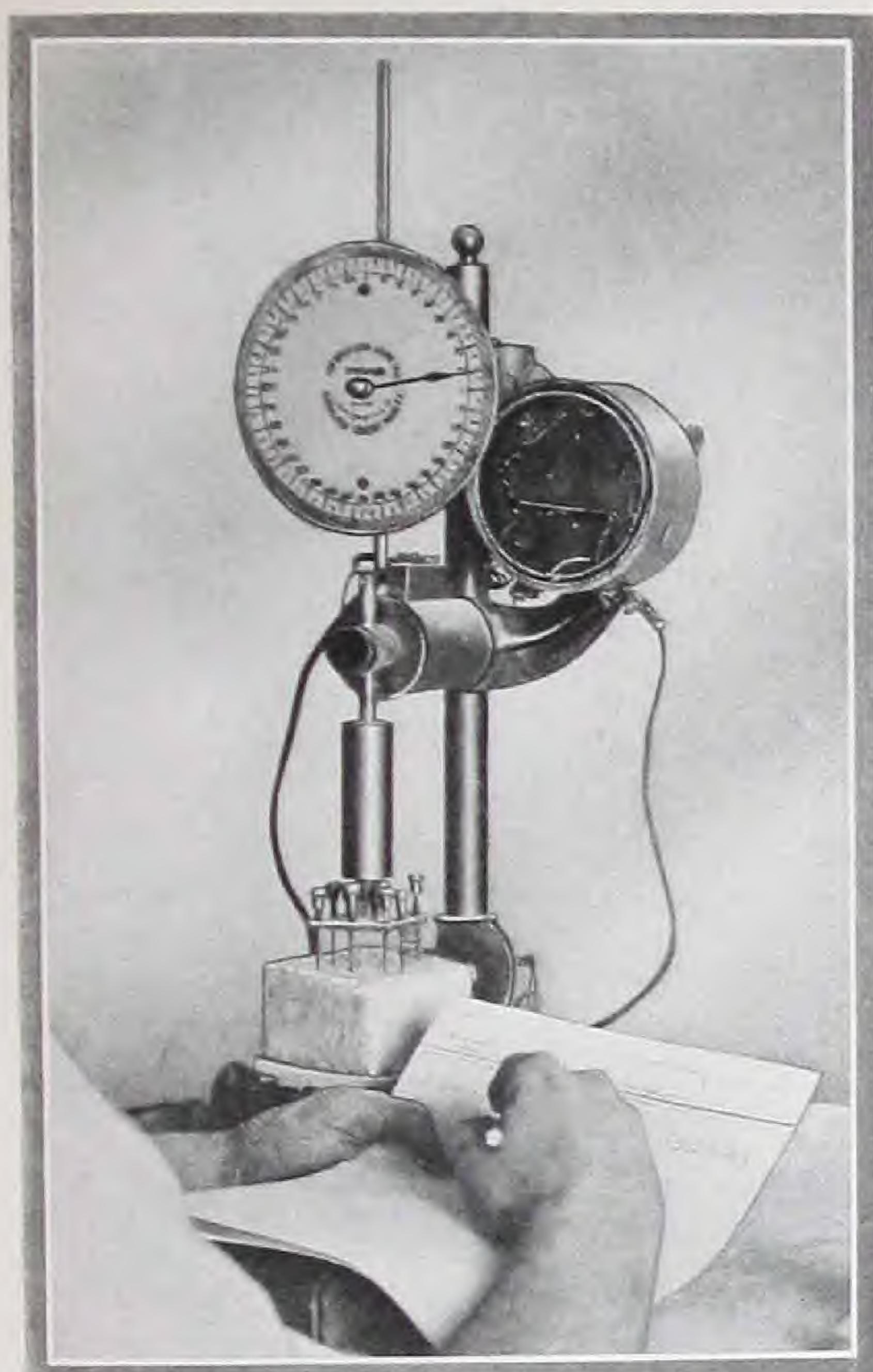


Fig. 1—The Penetrometer Test

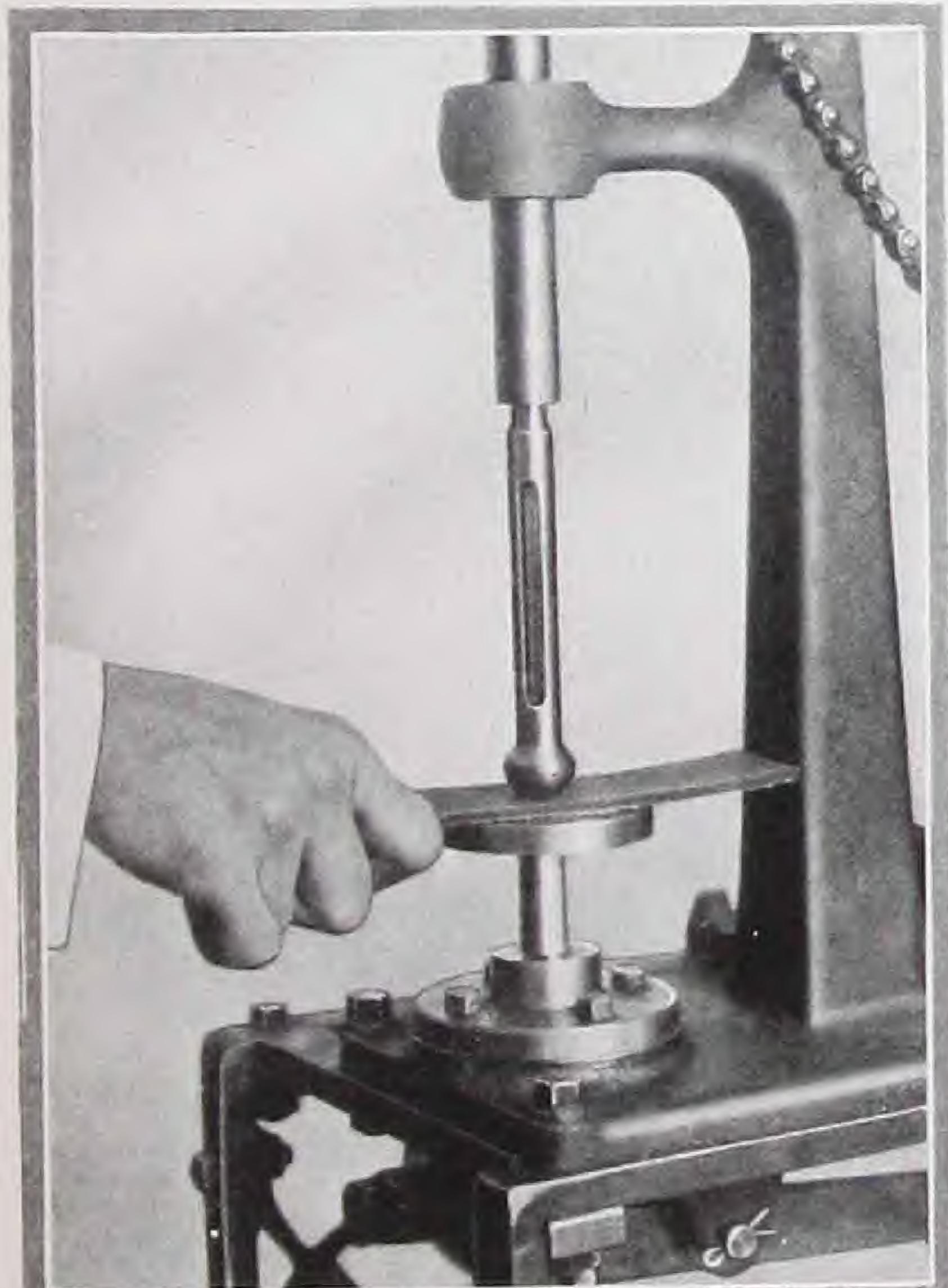


Fig. 2—The Abrasion Test

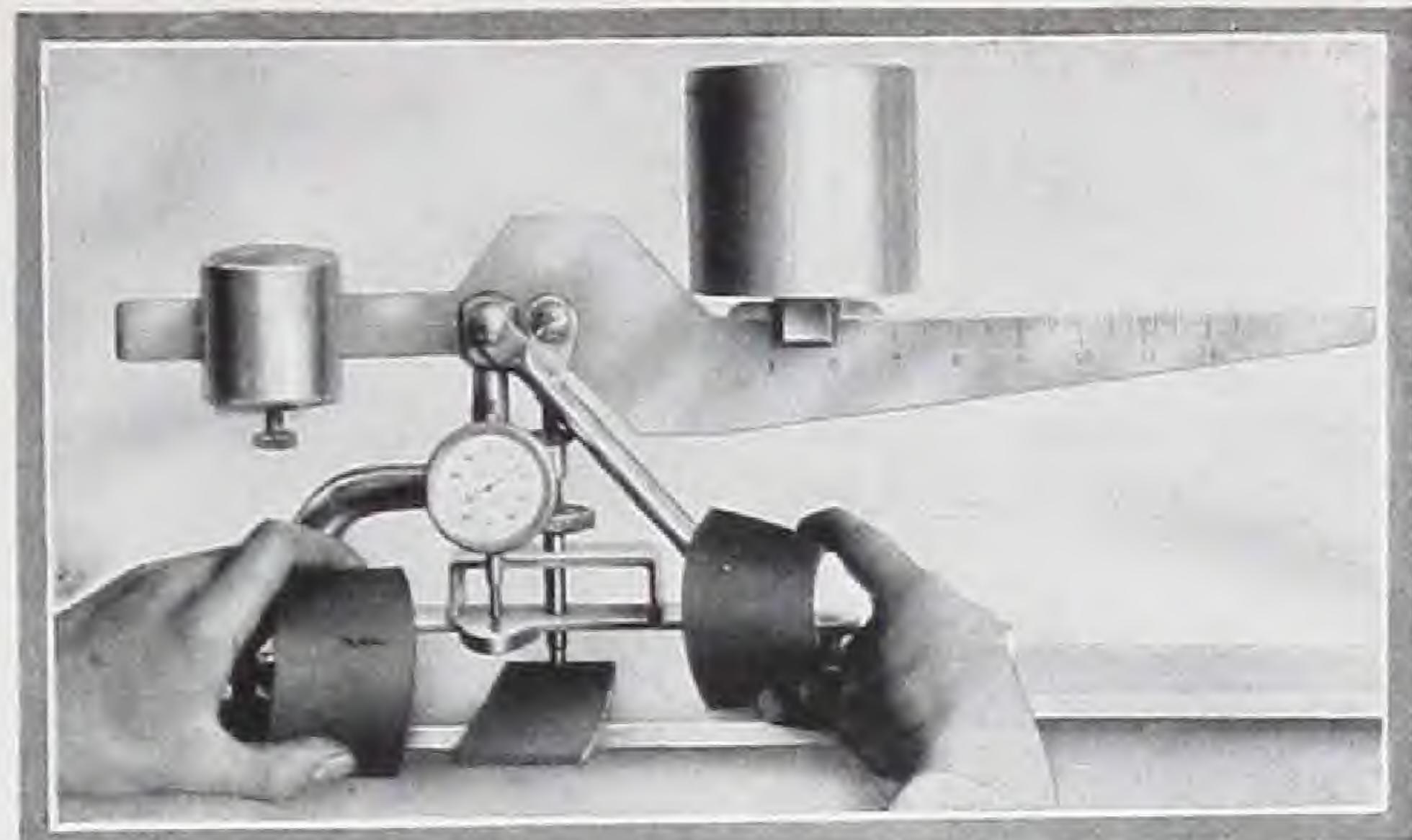


Fig. 3—The Indentation Test

Tests That Insure Standard Quality in Armstrong's Linoleum

UNTIL recently, the chief test to determine the maturity of linoleum was the "educated thumbnail." A workman pressed a practised thumbnail into every run of linoleum to see if the piece of goods was sufficiently seasoned to stand up under the wear of actual use. Naturally this test was not conclusive.

Constant effort to improve and standardize quality at the Armstrong factory has developed a set of accurate mechanical tests to which every run of linoleum is now subjected. The result is that Armstrong's Linoleum is standardized on a quality far higher than has ever before been deemed possible.

Three of the tests are illustrated on this page.

1. The Penetrometer Test. Applied to the "cement" or "binder" (oxidized linseed oil mixed with gums and resins). Electrically operated needles are pressed into samples of the elastic "cement," and the exact degree of hardness is registered on the dial. This test insures proper consistency of the binder for mixing with the pulverized cork.

2. The Abrasion Test. Before leaving the "stoves," samples of every "run" of linoleum are given this test to see whether or not the material is thoroughly seasoned. The rounded nose of the vertical shaft is revolved rapidly on the linoleum for 60 seconds under 150 pounds pressure. If the linoleum is properly matured, no abrasion of the surface is noticeable.

3. The Indentation Test. Applied to all battleship linoleum. The plunger (about $\frac{1}{4}$ -inch in diameter) under 80 pounds pressure is applied against the linoleum for 60 seconds. Provided the material is thoroughly seasoned, there is no surface breaking and any perceptible indentation will disappear.

How to Get Armstrong's Linoleum

ARMSTRONG'S Linoleum is sold through retailers of home furnishings and floor coverings, as well as linoleum contractors, throughout the United States. The names of reliable handlers in any locality may be had by writing the nearest branch office of the Linoleum Division of the Armstrong Cork Company, or to the home office at Lancaster, Pa. Branch office addresses are as follows:

295 Fifth Avenue, New York City
1206 Heyworth Building, Chicago
1205 Ulmer Building, Cleveland
1228 Candler Building, Atlanta
725 Symes Building, Denver
525 Rialto Building, San Francisco
302 Melba Theater Building, Dallas
802 Terminal Sales Building, Seattle

In practically every large center of population there is at least one good firm which makes a specialty of laying in accordance with the Armstrong specifications. Names of such firms may be had on request.

Literature and Samples

Owners, architects, or others interested in installing floors of Armstrong's Linoleum can secure literature on the subject and samples, as follows:

1. Pocket Size Pattern Book, which contains reproductions in color of all the patterns in the Armstrong Line—supplied free.
2. Pocket Size Quality Sample Books—two books containing actual samples of the various gauges of plain, jaspé, inlaid and printed linoleum—supplied free.
3. "Detailed Directions for Laying and Caring for Linoleum"—a handbook for linoleum layers, for which no charge is made.
4. "Armstrong's Linoleum Floors"—a technical treatise on linoleum for architects, interior decorators, and builders only.
5. "Decorative Linoleum Floors"—a 16-page portfolio of home interiors in colors for the architect, interior decorator, or home builder—furnished free.

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CCA



*Look for the
CIRCLE "A" trade mark
on the burlap back*